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D. & R. G. W. Employees Know "What Makes the Wheels Go Round" . . Page 939

The purposes of the "Manual of Procedures" which the Rio Grande has made available to its officers and employees are set forth in this article. Resultant increased employee knowledge has led to improved practices and economies.

Producers Look at Crosstie Prospects 943

A report on the Twenty-fourth Annual Meeting of the Railway Tie Association held at Cincinnati, Ohio, on May 6-7. Problems confronting the tie producer as a result of increased demands from railroads and war plants were reviewed.

Coal for the Country's Furnaces 948

The Western Maryland's contribution to the war effort through its efficient transportation of coal over much rugged mountain territory, is the subject of this illustrated article.

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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HOW TO SAVE TIME IN GETTING STEEL

HERE ARE TWO SUGGESTIONS. Follow them and you'll save time—the most important thing in the world today—in getting the steel you need for *Production for Victory.*

1. Keep up to date on Governmental regulations and revisions—and follow procedure as established by the War Production Board.

2. Be sure to give your steel supplier *COMPLETE* information on your inquiries or orders. Always include:

★ Government contract number and specification (department, number, date) . . . War Production Board allocation order . . . preference rating certificate or endorsement . . . Army-Navy Munitions Board code number.

★ Complete details on chemistry, physical properties and processing requirements (heat treatment, hardenability, etc.)

★ Full information on use of the steel. Be specific. Do not merely say "gears," but "a certain type of gear for a certain type and size of tank" or whatever the application may be. Sometimes several grades of steel may be suitable, but one may be more quickly available.

★ Make certain that all other necessary information is furnished—such as finishing required at the mill, nature of your first operation (for instance, is it cold shearing, saw cutting or other?), code painting specifications, shipping instructions, etc. The absence or incorrectness of these details may result in loss of time which cannot be recovered.

Complete information at the time the inquiry is made or the order placed will speed up clearance through Governmental agencies. It will speed up production of the steel and delivery to you. And, incidentally, it will save you the cost of extra correspondence, telegrams and 'phone calls.

We at Republic are working closely with Governmental agencies and customers. We're doing everything possible to help clear vital orders through to the mills so that the steel can be processed in the shortest possible time. Won't you help us to help you speed *Production for Victory* by furnishing complete information when you need steel?

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BARS and SHAPES • STRIP • SHEETS • PIPE and TUBING • FARM FENCE • WIRE • FABRICATED STEEL PRODUCTS

The Week at a Glance

THE PROBLEM: The A. A. R. a year ago predicted 1942 carloadings at 21 per cent above 1940. Actually, so far this year, they have been 27 per cent larger, and are growing. Also, at that time, the A. A. R. foresaw railroad freight car ownership at 1,800,000 in the fall of 1942. Actually, present prospects are that the total may be some 50,000 short of that estimate. In other words: More traffic and far fewer cars to move it in than reasonable foresight, based on information then available, was able to predict a year ago. The only answer—as the leading editorial herein points out—is a super-job of railroading in every department. And 1943 prospects will call for even more of the same.

●

SAVING LCL CARS: Evidence piles up that the magnitude of the railroads' job is calling forth the resourcefulness necessary to tussle victoriously with it. Look at l. c. l. loadings—off almost 51,000 cars in the May 2 week, despite the probability that *l. c. l. tonnage was greater than a year ago.* ODT General Order No. 1, quite likely, had something to do with this really amazing economy in cars but, as the table published with the leading editorial herein discloses, the saving began many weeks before the effective date of Order No. 1. Incidentally, this heavier loading of l. c. l. makes the carloadings figures even less representative than heretofore of the actual transportation job the railroads are doing. People doing their planning on a basis of carloadings figures will do well to turn a critical eye toward them henceforth.

●

"FIRING LINE" ADVICE: The superintendents are the officers who have more intimate experience than anybody else of just wherein railroads most need to reinforce their position—if they are going to win the 1942 traffic battle—and some of the more significant recommendations of these officers, made through their association, are summarized in our editorial pages. These officers make specific proposals for increasing the use-time of engines, reducing the standing time of cars, eliminating unnecessary train stops, and assuring an adequate supply of competent labor—ideas which deserve, and doubtless will get, the interested attention of the whole railroad industry.

●

A KNOWING SOLON SPEAKS: There is no man on Capitol Hill who is better informed about transportation than Clyde Reed, the Kansan; nor any man less likely to utter unmerited compliments. When he says—as the news pages herein report him to have done—that the railroads are doing "the most phenomenal job in their history," no man can be so skeptical as to doubt that he speaks accurately. Also, however—like everybody else who has any knowledge of transportation—Senator Reed is gravely perturbed at the failure of the WPB to allocate an adequate volume of steel for equipment construction. You can't move the stuff if there aren't enough cars to load it into, nor engines to pull the cars. Good as he knows the carriers to be, the Senator doesn't expect miracles from them.

●

HINTS FOR CAR INSPECTORS: Every car inspector, by a little extra alertness and snap—in hurrying along routine inspection, carding cars for the best lading for which they are suited, assuring prompt and thorough cleaning, co-operating with others to curtail rip-track detention—can produce many useful car-hours daily. General Superintendent Transportation Sperry of the Burlington outlines the car foremen's and inspectors' opportunities in the present crisis in a speech reported briefly in the news pages herein.

●

VS CURRENT OF TRAFFIC: One of the most obvious and fruitful ways of making existing transportation plant turn out more g. t. m. in fewer train-hours is to use double and multiple tracks for either-direction movement, so as to keep trains off of passing tracks. Getting signals to permit operation against the customary direction of traffic presents some difficulties, of course—but our signaling editor discusses ways to do this economically in the editorial pages herein. Where the necessity for this step is pressing, some way can be found to do the job.

●

DON'T BREAK THAT MACHINE!: Highly-specialized, precision machines are moving to war plants by rail today, on which production of a whole line of war goods may depend. Let one of these machines be damaged in transit—and the effect may be prolonged delay to a vital part of the war program. Transportation inspectors met in Chicago this week to learn from Chief Engineer Dahill of the Freight Container Bureau the ways and means to give such precious cargo as cozy a ride as one of Chessie's noted kittens gets.

●

DEMURRAGE $25 PER DAY?: Demurrage charges would go up to $5 a day after 36 hours free time, advance to $10 for the next day and be levied at $25 a day thereafter, if a bill introduced by Senator Reed becomes a law. He figures that, if shippers can thus be induced to release cars more promptly, an equivalent of 13,000 cars will be added to the available supply.

●

WPB TURNS ODT DOWN: The War Production Board has turned a deaf ear to Mr. Eastman's plea that it revise upward the meager allotment of steel it has made for railroad equipment construction during the balance of the current year. The ODT head concludes that this decision was rendered in good faith in the light of other vital national needs about which he is not informed. In a way, he says, the decision is a compliment to the railroads. The WPB has learned from past performance what the railroads can do, and has decided to take a chance that they can deliver the near-miraculous.

10,552 CARS IN APRIL: This was the total produced by both builders' and railroad plants during the month, as reviewed in the "Equipment & Supplies" columns elsewhere herein. The total is a few hundred ahead of March. The "backlog" of undelivered car orders at the end of the month was about 75,000—some 40,000 of them being for the railroads and private car lines and the balance for export, "lease-lend" and the government.

●

SHOP UNIONS' PATRIOTISM: Railroad shops will take on war contracts, with the shop unions patriotically foregoing the shorter hours and, in some cases, the higher wages paid for similar work in other plants, according to an announcement by ODT Personnel Director Otto Beyer.

●

TIE PROBLEMS DISCUSSED: There were about a billion crossties in railway track at the beginning of 1942 and *five out of six were treated.* At the beginning of the last war, only one tie in five was treated—which gives a general idea of one of the reasons why the railroads are able to meet the problems of this bigger war with so much confidence. Such was one of the many significant revelations made by Dr. J. H. Parmelee in his address to the Tie Association meeting, reported herein. Other speakers discussed various timely aspects of the tie situation—the possibility of a shortage in the face of heavy government demand; and the labor problem, aggravated by wage and hour legislation, the attractiveness of munitions jobs and requirements of selective service.

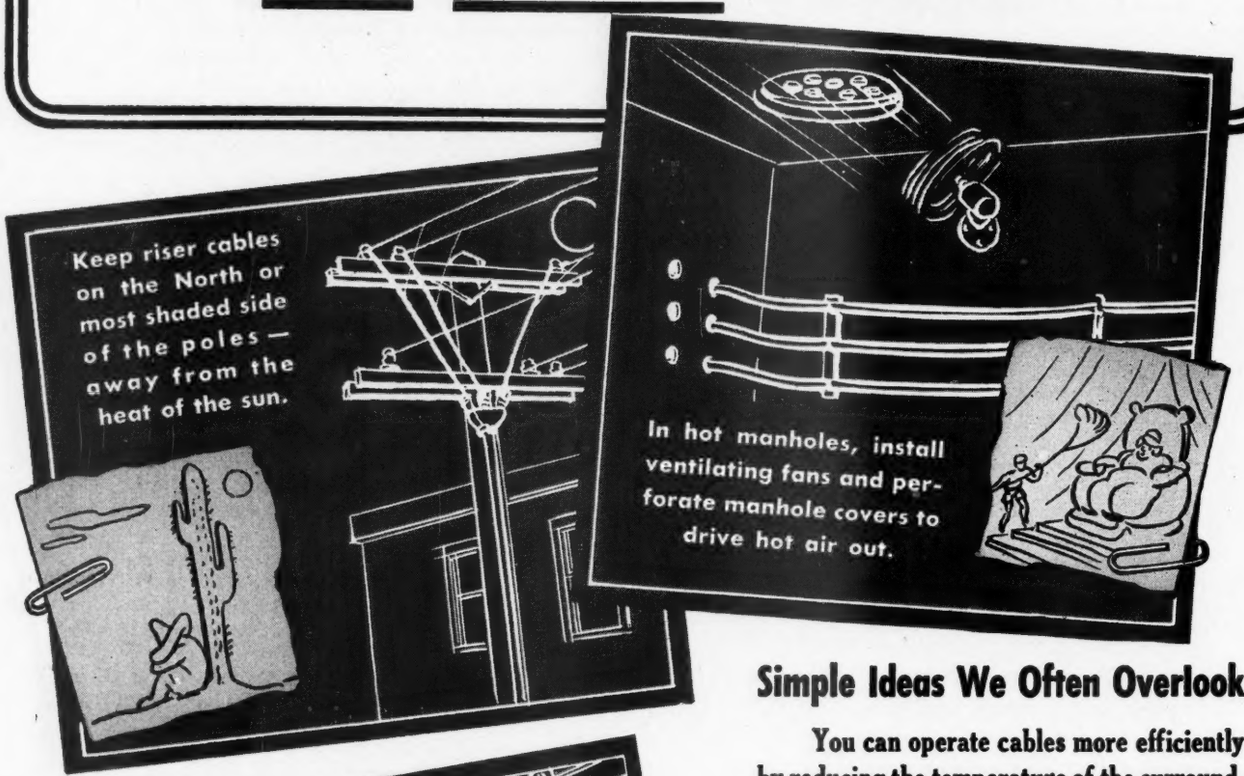
●

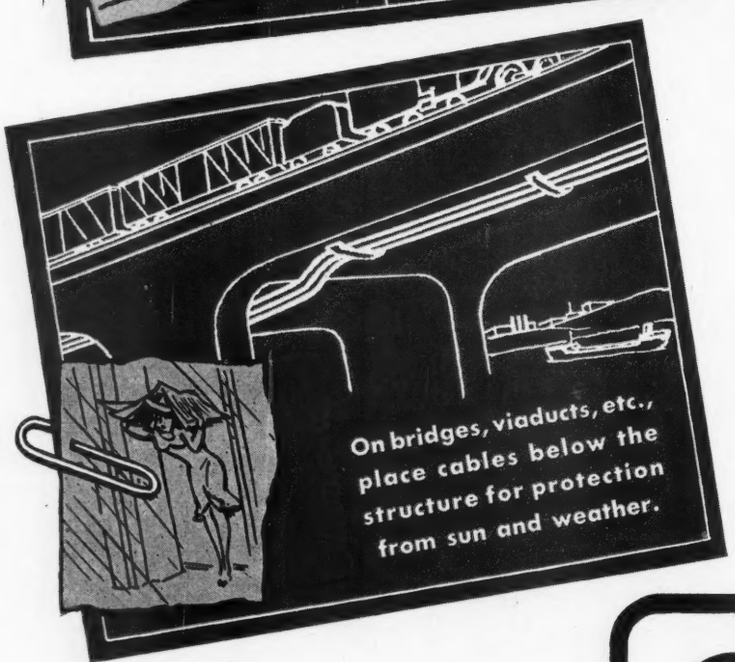
SPOTLIGHT ON SUPTS: "Unlike many industries which are concentrated in one place, the railroad industry is a far-flung affair, and the bosses at the top must leave much of the discretion to the officers who are on the spot, and the chief of these officers are the superintendents." Thus did ODT Director Eastman explain why he took time, which anybody who has been in his office knows is a commodity he cannot waste, to go to Chicago this week to address the Superintendents Association. He appealed to his audience for "all the powers of improvisation and every ounce of initiative and enterprise" in their possession, to squeeze out of a limited railroad plant the very greatest amount of transportation service of which it is capable. He advised them to put aside competition, and substitute co-operation.

●

"PUBLIC AID" HEARING: The Transportation Study Board will have hearings in Washington beginning June 29 on the crucial question of what transportation agencies get how much help from the taxpayers. Interested parties are directed to submit their evidence in the form of exhibits—to be circulated among other participants in advance of formal presentation. The Board will also make an advance distribution of its own studies on this subject.

How to Make Wires and Cables LAST LONGER Outdoors . . .


Keep riser cables on the North or most shaded side of the poles — away from the heat of the sun.
In hot manholes, install ventilating fans and perforate manhole covers to drive hot air out.



Simple Ideas We Often Overlook

You can operate cables more efficiently by reducing the temperature of the surrounding air because:

1. **the insulation will last longer with the same conductor load, or**
2. **more current can be carried in the same cable without shortening its life.**

Where current carrying capacity is not a factor (as with signal and control cables), lower ambient temperatures prolong the life of any insulation—especially rubber.

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● Make the most of your present cables — copper, rubber, lead and other cable components are vital to our war production and must be conserved. And call on Okonite Engineers for suggestions on the best way to install, operate and maintain your electric circuits.

OKONITE
Insulated Wires and Cables

RAILWAY AGE

Increasing Service with Inadequate Equipment

There is only one thing certain about the prospective freight car supply in the rest of 1942. This is, that it will have to be used with the utmost practicable efficiency if a serious shortage is to be averted. The Association of American Railroads on May 1, 1941, forecasted loadings in 1942 of 44 million cars, an increase of 21 per cent over 1940, and estimated an increase of 120,000 in railroad-owned cars would be required this year. Loadings in the first eighteen weeks of 1942 were actually 27 per cent larger than in the corresponding part of 1940, at which rate of increase they would in the entire year exceed 46 million cars. Furthermore, the increase is accelerating, having been, in January (over 1940) about 20 per cent; in February and March about 26½ per cent; in April over 34 per cent.

Car Loadings Increase Exceeding Forecast

The increase in the number of railroad-owned freight cars between April 1, 1941, and April 1, 1942, was about 74,000. It is impossible now to estimate what will be the increase during the rest of this year. Under the allocation of materials made by SPAB last year there were expected to be built 36,000 in February, March and April. Apparently this program failed of fulfillment by about 19,500; and it is assumed that these will be built, and in addition the 18,000 for which materials have been authorized by WPB. If all these should be built, and there should be no retirements, apparently the number of railroad-owned cars would be increased this year to about 1,765,000 as compared with 1,800,000 that on May 1, 1941, the Association of American Railroads estimated the railroads should own on October 1, 1942. But retirements of less than 2,500 a month—or of 20,000 during the last eight months of the year—cannot be safely assumed; and this would make the number of cars at the end of the year only about 1,745,000, or about the same as last February.

The Association of American Railroads also estimated on May 1, 1941, that loadings in 1943 would be 48 million cars, or 32 per cent more than in 1940, and that this would require a further increase of 150,000 cars in 1943 over 1942. Under this program a large part of the cars needed in 1943 would have to be built in the latter part of 1942. This cannot be done under the restriction of allocations imposed by WPB during the rest of this year. And as already shown, the increase in loadings in April, 1942, over April, 1940, already was 34 per cent, as compared with the increase of 36 per cent in the year 1943 over 1940 forecasted by the Association of American Railroads.

As we said last week, it must be conceded that WPB knows all the demands for materials for war purposes better than anybody else; and no doubt it is easier to criticize the allocations made by it than it would be to make them any better. But there has been one result of its recent allocation for railway purposes that has caused much complaint which appears difficult to answer. In many instances railways and carbuilders had materials on hand in such an advanced state of fabrication that there was virtually no choice between using them in car construction and scrapping them. Why, then, has their use in car construction been denied?

Making the Best of What Is Available

However, the railways simply are not going to get as much equipment, especially freight cars, as they estimated they would need; and the problem presented must be attacked as it is, and not as it was expected to be. The process of making an inadequate supply of equipment as nearly adequate as possible will be, in the main, a piecemeal process of doing many things the cumulative effects of which can be made very great.

A significant development has been the reduction effected in the use of closed freight cars in handling less-than-carload merchandise. A press release from the Office of Defense Transportation on May 9 "disclosed a saving of 31 per cent in closed freight cars

loaded with less-than-carload merchandise two days after ODT's General Order No. 1 became effective." This order set a six-ton minimum on merchandise loading effective on May 1, and prohibited use of closed cars in intra-terminal movement. With all due respect to ODT, the improvement to which it referred began long before its General Order No. 1 was issued. This is shown by the statistics of l. c. l. carloadings during the first eighteen weeks of 1941 and 1942 given in a table herewith. It is true that in the week ended May 2, 1941, l. c. l. loadings were 163,691 cars and in the week ended May 2, 1942, only 112,736, a saving of almost 51,000 cars. But, as the statistics in the table show, this saving has been occurring throughout the present year, and already was 38,475 cars in the week ended April 25, before General Order No. 1 became effective.

L. c. l. Carloadings in 1942 and 1941

		1942	1941	Saving in L.c.l. cars 1942 Compared with 1941
Jan.	3	123,113	125,101	– 1,988
	10	139,844	146,716	– 6,872
	17	146,688	147,782	– 1,094
	24	149,455	149,862	– 407
	31	151,786	151,283	+ 503
Feb.	7	151,718	153,324	– 1,606
	14	151,515	153,049	– 1,534
	21	150,030	139,280	+10,750
	28	143,542	159,365	–15,823
Mar.	7	148,519	158,910	–10,391
	14	146,821	159,286	–12,465
	21	145,078	158,661	–13,583
	28	143,550	161,119	–17,569
Apr.	4	139,798	162,942	–23,144
	11	132,367	161,667	–29,300
	18	129,436	161,009	–31,573
	25	123,580	162,055	–38,475
May	2	112,736	163,691	–50,955

Saving Closed Cars by Increased Loading

This relief to the tightening situation with respect to supply of rolling stock for the nation's rapidly increasing traffic comes only in the category of box cars. It does not ease the possible scarcity in "open top" cars —in which the bulk of the raw material (such as coal and ore) and finished products, connected with the war effort, are transported. The railroads need large additions to their supply of such cars as much as they ever did—and heavier loading per car cannot improve the situation much with respect to "open top" cars, because such cars have been loaded to capacity, as a general rule, as a matter of standard practice.

Less-than-carload traffic has been loaded only a few tons per car, on the average, in the first place, because until quite recently the railroads had the cars to spare and, secondly, because such light loading enabled them to give a superior service to shippers. Now, however, cars must be saved—and eliminating lightly-loaded l. c. l. cars is an obvious place for economy to be instituted. The accompanying table shows the l. c. l. cars loaded in each of the 1942 weeks up to May 2, compared with last year's loadings in comparable weeks—with the difference shown in the third column.

Under the order from the Office of Defense Transportation the railways are to load not less than 6 tons per car (with certain exceptions), effective May 1; and on July 1 this minimum rises to 8 tons and on September 1 to 10 tons. Such an order frees the carriers from anti-trust law prosecution in reducing their competition with each other and with truck lines.

Recommendations from the "Firing Line"

The American Association of Railroad Superintendents is composed of railway officers who may most appropriately be said to be "on the firing line." Engineering and maintenance of way officers provide the permanent structures for using equipment; mechanical officers provide the equipment; and transportation officers, such as those composing this association, operate it and know best from their daily experience what is necessary to secure the most efficient use of it. The American Association of Railroad Superintendents met in Chicago this week and the reports of its committees contain numerous recommendations for increasing the efficiency with which equipment is used. Some of these recommendations are not new, but recommendations for intensified use of sound methods under such conditions as now exist may be no less important because not new.

Among the recommendations of the Committee on Getting Greater Use from Locomotives were the following:

> That when running locomotives through terminals, careful consideration be given to the arrangement of tracks, fueling, watering and other service facilities to promote expeditious handling. That where operating conditions justify, runs of locomotives be extended to increase their productive time. That special attention be given to the possibility of reducing the turning time of locomotives at terminals. That greater study be given the control of hot boxes to increase productive locomotive time. That auxiliary water tanks be used to eliminate train stops where operating conditions justify. That operating and mechanical officers collaborate in closing the gap between actual and potential locomotive service.

Conserving Equipment and Fuel

The Committee on Securing Maximum Utilization of Freight Cars pointed out that "Each day's reduction in the turn-around time of cars adds 100,000 cars" and emphasized the following points:

> Many cars can be saved when two or more roads serving a large industrial plant permit their general service cars to be pooled by the industry, instead of insisting that individual cars be returned to delivering lines. Under such conditions there should be close supervision to insure that roads do not keep excessive supplies of empty cars at these industries. A more thorough knowledge of existing car service and per diem rules by those who have to apply them is more essential than any changes in these rules. It is sometimes advisable to work two shifts on car repairs—with the night shift looking principally after loaded cars. Greater progress in increasing car loading is made through co-operative effort with shippers than by tariff legislation. The short routing of empty cars should receive daily attention to prevent circuitous routing to home rails.

The Committee on Fuel Conservation in the Light of 1942 Conditions, observed that "Fuel conservation has taken on a new aspect for the railways this year when, entirely aside from the economies effected, the release of equipment for commercial uses becomes a primary consideration," and raised the following questions:

How many locomotives are stored? This is a vital question. On one large eastern railroad this question is asked daily by a vice-president to insure that the minimum number of locomotives are kept under steam. Is the proper locomotive used on each run? Are boiler wash periods properly regulated? We should keep trains moving, for terminal delays and time spent on passing tracks are fuel wasters.

The Committee on Operating Rules made the following recommendations: That, where two or more lines use the same trackage, the railroads concerned adopt a uniform code of operating rules, including interpretations thereof. That, to expedite the movement of trains, consideration be given to elimination of the form "31" train order.

Personnel Problems of the Superintendent

The Committee on Personnel Problems of the Superintendent in Handling the Defense Load said in part as follows:

The personnel problems of every supervisory officer, especially the superintendent, have been greatly increased, not only because of the heavier loads placed on the railroads, but because of the loss of experienced men through induction into military service, and to defense projects and industries paying higher compensation. It is now sometimes necessary to place at least one unseasoned man, and in some instances two, on each train. The problem of securing competent station agents, telegraphers and train order operators is a particularly difficult one on most railroads because of the closing of so many stations and the reduction of forces during the depression.

In meeting the demand for additional employees, there is a tendency to relax age requirements for new employees, especially to raise the upper limit for experienced men, and, in some cases, to reduce the lower limit below 21 for entry into train service and other classifications. The committee recommends that the railroads give immediate consideration to the employment and training of women for such positions as telegraph operators, coach cleaners, janitors and possibly, to some extent, for warehouse labor.

The committee recommends the more intensive use of present forces, through the raising or abolition of mileage limitations in train and engine service. The committee also recommends that railway officers attempt to work out agreements with the labor organizations, looking to the removal of excess employees now required under certain "full crew" and "train limit" laws, at least for the duration of the war.

Expediting Coal Production and Shipment

A movement of much importance being promoted by both the Office of Defense Transportation and the War Production Board is the early purchase, shipment and storage of coal. Under normal conditions about 27.3 per cent of the year's supply of coal is produced and shipped in October, November and December and about 26.2 per cent in January, February and March—a total of about 53½ per cent in these six months. The early fall months are normally the period of heaviest traffic, and the winter months those when weather conditions make operating conditions most difficult. For a larger part of coal to be produced and shipped in the second and third quarters of the year would be a very real contribution to the car supply and to increased efficiency of operation. In 1941, partly owing to the coal strike in April, 55.2 per cent of coal loadings were made in the first and last quarters of the year and only 44.8 per cent in the second and third quarters. The burden imposed upon an inadequate supply of equipment would be much better distributed during the year, and reduced to an important degree in the fall and winter if the efforts being made to increase buying and storage of coal during the second and third quarters of the year should be successful.

More Efficient Utilization of Multiple-Track Lines

As an aid to the war program, every means within reason should be employed to utilize existing tracks and locomotives most effectively. One source of delay on double track lines is the practice of putting a train on a passing track to allow a train in the same direction to pass, while the track for the opposite direction is idle. A solution is to provide signaling for either-direction operation on both tracks. At interlockings or at new locations controlled from existing interlockings, crossovers can be used to divert trains from one main track to another. Through such an arrangement, during the periods of the day when more trains are operated in one direction than in the other, all of these trains can be kept moving rather than some of them losing time on passing tracks, for when one train is to pass another, the slower train can be diverted to left-hand running while the faster train passes, or the slower train can continue on the right-hand track while the faster train runs around it on the other track.

Either-direction operation on each track of multiple track sections has been used to advantage in certain terminal areas for years, as for example between Mott Haven Junction and the Grand Central Terminal in New York. Likewise the Boston & Maine, the Pennsylvania, the Chicago, Burlington & Quincy, the Atchison, Topeka & Santa Fe, and the Boston & Albany have short as well as extensive territories with complete signaling and traffic locking. As a general rule, however, on a line with two or four tracks, each track is signaled for train operation in only one direction, and comparatively few train orders are required, especially on lines where all the crossovers and main line switches are included in interlockings. In such a territory reverse running can be authorized by train orders, but extensive utilization of such a practice is not de-

sirable in a territory where complete interlocking and signaling protection is in service for all other train movements.

A logical solution, therefore, is to make such additions to the signaling as may be necessary to secure protection for train movements in either direction on both tracks so that each track will be signaled practically the same as for centralized traffic control on a single track main line, with the exception that in most instances fewer intermediate signals need be provided for reverse running.

On portions of certain railroads where interlockings are spaced 10 to 20 miles apart, these existing plants may be used to advantage for instituting either-direction train operation on two or more tracks, and one large railroad has done this on an extended mileage within the last year. Where new crossover layouts are to be provided as a part of proposed either-direction operation, a detailed study of time-distance train operation during acceleration, deceleration and top speeds is required, in order that the new crossover stations may be spaced properly to afford the best opportunity for run-around moves.

As an arrangement to be used for the duration of the war, two crossovers between two main tracks can be developed from the turnouts at the two ends of existing passing tracks, the need for which would be obviated by the proposed practice of either-direction operation. In such a layout, the additional materials would be confined to four power switch machines, several signals and the centralized traffic control coding apparatus. Comparatively little metal is required for such track changes and signaling, and the projects can be planned and completed within a short time. It would seem, therefore, that where either-direction train operation on each of two or more main tracks will increase the capacity of existing tracks as well as permit more locomotive road miles, the changes required can and should be considered a logical part of the war program.

No Black-Out on Foresight

There are many who believe the railroads' whole duty is to move the traffic now offered and to let the future take care of itself. Certainly, the movement of war traffic is the job now in hand, and, unless it is done supremely well, there may not be any future worth worrying about.

On the other hand, if private industry does not look ahead of the present hostilities, it is likely to find, when the war ends, that the future has already been well taken care of by the hundreds of government officials who are doing nothing else today but such "advance planning."

Not long ago the Wall Street Journal reported a warning from Vice-President Bert White of the Liberty National Bank of Buffalo, N. Y., to the effect that the government has "plans in embryo for handling the whole post-war problem of employment" if it is necessary, and that "the all-important task of private industry is to lay its plans in such fashion as to obviate that necessity." He also emphasized, the Journal reported, "the desirability of swift resumption of production of former peace-time products if those products have not been superseded by other or cheaper forms, and also development of other uses for plant now engaged on war material."

Post-war employment, the Journal continues to say, "must be forthcoming either by government or by private capital and private initiative. Is there any real debate amongst us as to which of the either-or prongs is desirable."

What can railroad "planning" consist of? For one thing, it certainly should encompass some final and conclusive action in the field of competitive rate-making—to insure to the carriers for the future all the traffic to which they are economically entitled (as far as legislative favoritism of competing agencies of transportation will permit). It would be a grave and costly mistake if foresight and planning to meet wisely the renewal of competitive conditions should be suspended "for the duration."

Then there are economies in the handling of freight which the war will have brought about (such as the really startling saving in l. c. l. cars already achieved)—and means will need to be discovered for retaining such economies where they are sound; because some of them, possibly, might not have been achieved in peace-time, with the anti-trust policy of the Department of Justice being what it is (i. e., enforcing a wasteful competition on natural monopolies, which are recognized as such by the law).

There is, also, the certain problem of competition from the air to face. How large will it be? What traffic will it most seriously affect? How can this new service be made to *co-ordinate* with railroad service, rather than develop the economically wasteful overlap which occurred when highway transportation appeared on the scene?

Aside from such traffic and economic considerations, which need intensive and critical analysis, if peace is not to give the carriers more to worry about than the war has done—there are a host of technological changes arising from the war to which the railroads will have speedily to adapt themselves.

For men as busy as railroad managers and supervisors now are with the terrific job in hand, also to have to concern themselves with what the future may hold, is certainly adding to their difficulties. Yet government is doing this job, and on a tremendous scale. So are many other large private industries. It seems probable that those industries which—while doing all that is humanly possible to bring victory to the war effort—are also looking ahead to the coming peace, will be the ones which will profit most when profit again becomes possible.

Ridgeway

D. & R. G. W. Employees Know "What Makes the Wheels Go Round"

Manual of Procedures, containing all forms and reports used on the road, has increased employee knowledge and led to improved practices and economies

TO a greater extent than possibly on any other railroad in the country, the D. & R. G. W., as an operating property, is an "Open Book" to all officers and employees. This can be said because in recent years this road has developed a Manual of Procedures, a volume of more than 1200 pages that is available to officers and employees alike, which presents in neat and compact form information concerning the railroad as a physical operating property, its officer personnel of all ranks, and all of the widely ramifying duties, functions and procedures of each department. In addition, the Manual includes printed specimens and explanations of all of the approved record forms used on the road.

Two Main Purposes

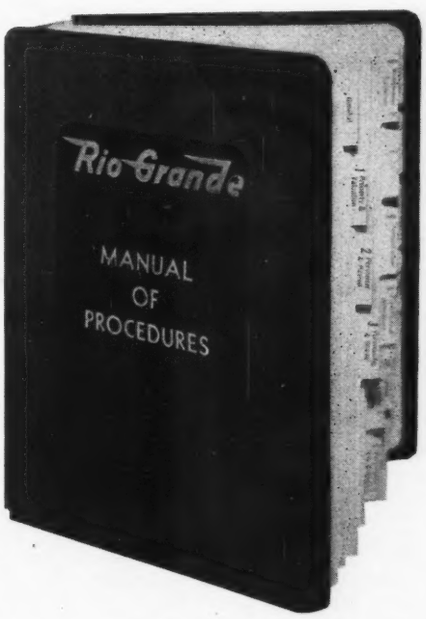
Broadly speaking, the purpose of the Manual, the compilation of which was started in 1938, is two-fold—first, to afford an effective means of establishing and maintaining standards of recommended procedure for all officers and employees, in order to avoid waste through ignorance or inefficient methods, and second, to afford officers and employees an opportunity to learn all phases of the company's business, and thus prepare themselves for further advancement. These purposes are nowhere better expressed than in the letter addressed to all employees by the general manager of the road, forming one of the early pages of the Manual of Procedures, which says, in part, as follows:

"Procedures are necessary to promote the orderly conduct of the business, produce uniformity of action and avoid confusion, correspondence, etc. No office could function and no employee could carry out his individual duties unless it is known what each employee should do under ordinary circumstances.

"The railroad business is complicated and there are many employees scattered over a wide territory. The degree of efficiency attained by the company is measured largely by the efficiency of each employee.

"The Manual of Procedures has been issued for use by the employees as a guide and reference book, to aid them in the performance of their regular daily work. The Manual gives detailed instructions on all reports and records and all the permanent standard practice instructions. The instructions represent, in the opinion of the management, the best practices in use at the time of the issuance of the Manual.

"The Manual represents an exhaustive study of all phases of the company's operations. Old and new employees will find a study of the Manual to be an invaluable aid in broadening their knowledge of the company's activities beyond their own particular jobs."



The Manual of Procedures Is a Hard-Bound Loose-Leaf Book of More Than 1200 Pages

Very directly, these fundamental purposes of the Manual are being achieved—procedures have been simplified and unified; short-cuts to the same or more effective ends have been developed; and more than 470 forms formerly in use have been eliminated, saving paper, printing and handling costs, and, in many instances, the labor of filling them out. At the same time, employee interest and efficiency have increased, and promise to continue to increase to the extent that they take advantage of the information and instructions made available to them.

Wasteful Practices Uncovered

Large as are the advantages being found in the Manual as a text and reference book, the advantages that accrued incidental to its development were equally as large. In this latter regard, the study leading to the decision to publish the Manual, and the work of compilation itself, developed that practices over the road varied widely, with differing degrees of efficiency or wastefulness; that there was a multiplicity of forms in use, many duplicating one another, in whole or in part; that the handling of forms varied in different offices over the road; and that various types and sizes of paper were being used for reports, many unsatisfactory, either from the standpoint of the legibility of the filled-in data, or that of convenience in handling or orderly filing. At the same time, it was found that many costly forms, from the standpoint of printing, were in use, and that through the simplification of these forms, eliminating ruling where possible, and the installation of a relatively small amount of reproducing equipment of its own, the road could effect large savings.

Under the former system, or lack of system, in han-

D&RGW Form 2745

Mr. E. Larson, Dist. July 1, 1939
Burnham, Colo.

Please note the following changes in P.A. bills, account freight deductions, etc. and change your records to accord.

Yours truly, C.O.B. Hall P.A.

P. A.	Firm	From	To	Reason
19738	M.R. Floss, Inc.	16 00	15 01	Frt. 99¢ deducted
Transmittal #5 June a/c		178 30	177 31	

NOTICE OF CHANGES IN P.A. BILLS FORM 2745

DESCRIPTION

This form is 5½ x 8½ inches, mimeographed in black on white 16# sulphite paper, padded 100 to the pad. Order by requisition on Stationer.

FUNCTION

It is used by the Purchasing Department to notify Storekeepers and Superintendents of corrections made on P.A.Bills, and totals of Transmittals of Invoices (Forms 2856 and 2856½).

PREPARATION

This form is to be prepared in duplicate by the Purchasing Department when necessary to correct invoices already forwarded to Storekeepers or Superintendents.

Date the form and address it to the Storekeeper or Superintendent to be notified.

Fill in the P.A.Bill number and name of Vendor. Show original amount of invoice and amount as corrected, giving reason for adjustment in space provided therefor.

After the word "Transmittal" fill in the number and month's account of the Transmittal of Invoices (Form 2856 or 2856½), the total of which is being changed. In the column headed "From" show original total of Transmittal, and in column headed "To" the corrected total.

The form will be signed by the Purchasing Agent in space provided in upper portion of the form.

PROCEDURE AND FILING

The original will be forwarded to the Storekeeper or Superintendent, duplicate being retained in the Purchasing Department.

The files of these forms are retained in the Purchas- Department for a period of one (1) year.

DENVER & RIO GRANDE WESTERN R. R.

ORDER NO.	INV. DATE	QUANTITY	DESCRIPTION	PRICE	UNIT	DISCOUNT	F.O.B.	FREIGHT		SHIPPER
10295	5 7/6	400	1/4 x 3"	5 70	C	65-7½	Pueblo		Pueblo	Holmes Hdwe Co.
10171	5 14	100	1/4 x 5 1/4"	7 80	C	65-7½	Denver		Denv	Merc Hdwe Co
10005	5 17	100	1/4 x 3 1/4"	1 85	C	65-7½	✓		✓	Miner Supply Co
9801	5 19	400	1/4 x 4"	7 30	C	65-7½	✓		Pueblo	Hawkins Foothill
10172	5 26	100	1/4 x 5"	7 60	C	✓	✓		Denv	Denv Sheet Metal Co
10173	5 21	500	3/8 x 3"	3 70	C	✓	✓		✓	Goldberg Bros
10174	5 24	400	3/8 x 6 1/4"	4 90	C	60-7½	✓		✓	Denver Fiber Con Co
10589	5 29	100	1/4 x 14"	18 40	C	✓	Salt Lake		Salt	McMurray Mfg Co.
10661	5 24	300	3/8 x 7"	7 60	C	65-7½	Ogden		Ogden	Denver Fire Clay Co
W-1768	5 26	50	3/8 x 7"	6 40	C	60-7½	✓		Salt	Salt Lake Hdwe Co.

BOLTS CARRIAGE

PURCHASE RECORD FORMS 2706 AND 2706-A

DESCRIPTION

Form 2706 is 3-3/4 x 10-1/2 inches and Form 2706-A is 7-1/2 x 10-1/2 inches, printed on both sides in black, with special colored ruling, on yellow ledger bond paper, punched at left for ring binder. Order by requisition on Stationer.

FUNCTION

They provide the Purchasing Department with a ready reference record of materials purchased, and are used to compare prices on previous purchases, and to supply all information requested on purchases.

PREPARATION

Sheets are arranged in the binder in alphabetical order by articles of material. Complete entries are to be made in the record daily from all completed Purchase Orders.

PROCEDURE AND FILING

This record is maintained permanently in the Purchasing Department.

Typical Page From the Manual of Procedures—Section 3—Purchases and Stores—Illustrating How All of the Forms Used on the Road Are Reproduced and Described in the Manual

dling stationery and forms, the various department heads, acting independently, drew on the stationery department for their supplies, often drawing up and requisitioning forms of their own design to meet fancied or real conditions. In addition, with ditto and mimeograph machines scattered over the road at division points and in many agents' offices, many offices were making their own forms. Still others, without knowledge of costs, were requesting unduly large and elaborate forms that could be produced only by well-equipped outside printers, at large expense, when far less elaborate and costly forms would serve equally as well or better. All of these various practices, which were beyond the authority of the stationery storekeeper to control, were corrected with the development of the Manual and the improved standards adopted in connection therewith.

A Well-Bound, Loose-Leaf Book

The Manual, a loose-leaf volume, 8½ in. by 11 in., with at present more than 1200 pages, is equipped with a Thong binder with stiff covers, faced with strong cotton duct and leather corners, all in black, to resist wear. All pages are of 20-lb. white sulphite paper, and all printing, which is in two columns on both sides of the pages, is by the Multilith (rubber offset) process.

Fundamentally, the book, covering every phase of the railroad's business, both internal and external, is divided into 16 main sections as follows: General; Section 1—Property and Valuation; Section 2—Personnel and Payroll; Section 3—Purchasing and Stores; Section 4—Tariffs and Rates; Section 5—Maintenance of Way and Structures; Section 6—Maintenance of Equipment; Section 7—Traffic; Section 8—Transportation; Section 9—Miscellaneous Operations; Section 10—Financial; Section 11—Accounting; Section 12—Safety and Medical; Section 13—Insurance and Taxes; Section 14—Legal and Claims; and Section 15—Filing. In turn, two of these main sections, Personnel and Payroll and Maintenance of Way and Structures, are subdivided into two sections, and the main section on accounting is subdivided into six sections. Altogether, the book at present contains specimens, in whole or in part, of more than 1200 currently used forms, in many cases, recently improved, each being accompanied by a description of the form and statements relative to its functions, how and by whom it is to be filled out, and the procedure to be followed in its use, distribution and filing.

In addition to the forms presented, each departmental section of the book contains a detailed contents page and a general statement of the purpose, functions and scope of the department concerned, sufficiently detailed to acquaint officers and employees generally with the work of the different departments, and a diversity of other information, such as rules, instructions and standards governing the personnel and department work itself. For example, Section 8 on Transportation, in addition to 179 forms, has general statements on operating rules, train schedules, freight distribution, hire of freight cars, weighing, inspection, demurrage and storage, station service, yard operation, train movement, motive power, train and engine crews, dispatching, embargoes, railway line clearances, service bureau, transportation statistics of various kinds, telegraph reports of accidents, definitions, rules and regulations of the operating department, "rule-a-day" plan, etc.

Section 3, on Purchasing and Stores, in addition to 52 forms, contains information on such matters as the purchase of coal; special instructions covering the ordering of materials for AFE work, for ordering material, verbally or by telegram; the changing, eliminating or substituting of materials; standard classification of materials; the location of stores; grouping of materials; traveling storekeepers; special program materials; surplus material; obsolete material, etc.

The General section, as might be expected, contains information and forms of general interest to all officers and employees, including a map of the system; a roster of all officers; a list of all stations; and information about safety matters, staff meetings, company clubs, telephone and telegraph service, railroad mail, stationery, calculating machines, etc. In addition, this section reproduces and comments on a total of 63 forms.

Small Force Prepared the Manual

The work of preparing the Manual was started in 1938 under the then budget director of the company, who was given the additional title of manual supervisor. His staff on the manual work included only an assistant manual supervisor and a stenographer, both regular employees of the accounting department.

As the first work of compiling the Manual, the manual supervisor, looking to completing one section of the book at a time, collected samples of all record and report forms in use on the railroad relative to the specific department under consideration at the time, addressing all of the department heads, division officers and agents to this end and checking closely with the stationery storekeeper. These samples, in triplicate, were mounted individually on 11-in. by 17-in. work sheets, convenient for handling and shuffling into various arrangements for study and classification.

With all forms in hand, which disclosed immediately the duplications and overlapping, and the wide variety of sizes, paper used and printing, referred to previously, not to mention many worthless or little-used forms, a questionnaire was sent to the party or parties concerned relative to each form, calling for detailed information covering every phase of the forms used, as well as a statement of estimated annual requirements. In addition, the return of one copy of the form, completely filled out, was requested, to be used as a sample for reproduction in the Manual.

With all of this information in hand, it was studied carefully for duplication and unnecessary data, and for possible improvement as to size, paper stock and economies in production. Where everything appeared in order and no questions were to be raised, the forms were prepared for reproduction in the Manual by the Multilith process. On the other hand, where questions were raised relative to any phase of a form, these questions were taken up with the department head or heads concerned, even to the extent of calling conferences where several departments were concerned and this seemed the most expeditious method of handling.

As the result of this detailed inventory of forms, many were consolidated, many others were killed entirely, and still others were broadened to expand their usefulness, sometimes to meet the needs of several offices or departments. In addition, special attention was given to the size of the forms, a determined effort being made in the interest of economy in paper through the elimination of waste in cutting, and also in the interest of ease of filing, to adhere to an 8½-in. by 11-in. size, or a multiple thereof. Likewise, names of officers were eliminated from forms in so far as possible, substituting titles, to avoid waste with periodic changes in personnel. Study was also made of the methods of printing employed, which, as will be pointed out later, resulted in substantial economies.

Typical of the changes made in the size of forms, with

economy in paper and greater ease of filing in standard letter files, are those made in a number of the fuel record forms. Here, for example, forms No. 610, 611, 612 and 615 were all of different size, ranging from 13½ in. by 14½ in. to 14 in. by 17 in. As revised, all of these forms were made 11 in. by 14 in., which, with one short fold, fit neatly into every letter file, and, at the same time, economize in the use of paper. With these changes in size, the costly ruling of many forms was eliminated, and the smaller sizes, lending themselves to reproduction on company-owned equipment whereas the larger sizes did not, have made possible large savings in printing costs.

Six tariff forms were being used prior to the manual work for transmitting tariffs to state regulatory bodies. By making a few changes, one of these forms was made to serve all purposes. Again, the road formerly had three separate remittance slips for use by the dining car department, the hotel department and station agents. By revision, one of these forms was made suitable for use by all of these departments. And still again, welders were required formerly to use six forms in reporting performance, progress, materials used, etc., but when revising the forms for the Manual, it was found that with a few changes, two of these forms could be eliminated. That this process of elimination was carried through all types and classes of forms, with large resulting savings in paper, printing, stenographic help and other waste, is seen in the fact that up to the end of 1941, more than 470 forms had been eliminated as no longer necessary.

Study of the costs for the printing of its forms by outside concerns, and of comparable costs with company-owned equipment, showed the possibility for large savings. As a result, the company purchased a Multilith machine with a printing area 12¾ in. by 19 in.; a power multigraph using two standard segments and equipped with a perforating attachment; a power mimeograph; a radial drill for drilling holes in and slotting forms; and a power paper cutter—all at a cost of approximately $8,000. On this investment, with a monthly production of 400,000 to 750,000 form sheets, the road has been effecting a saving in form costs ranging from $500 to $600 a month. In addition, by calling in most of the duplicating equipment formerly scattered over the system and prohibiting its use for all but local notices and letters, the road has effected additional savings of considerable magnitude.

Throughout the production of the Manual, the staff of the Manual sought and obtained the closest co-operation of all department heads, and, in turn, did everything possible to meet the convenience of the individual departments, even to delaying sections of the book until the departments concerned were least busy or best able to undertake their part of the work. In this way, all data were prepared by the respective departments within regular hours, at no extra cost, and with the least inconvenience to officers and employees.

Controlled Distribution

Distribution of the Manual is under careful control; both to see that it is available to those who must follow its standards and to any others interested in broadening their knowledge of the railroad's operations, and in the interest of avoiding unnecessary expense. Under the plan of distribution put into effect, copies of the Manual are assigned to all general and higher division officers—on the divisions, two copies being assigned to the superintendent and one each to the division engineer, the chief dispatcher, the master mechanic and to each trainmaster. Each off-line traffic representative also has a complete Manual. These books, according to instructions, must be kept in suitable, handy places, where they are readily available to those interested for study and reference.

Individual sections of the Manual are made available to subordinate officers over the road, including roadmasters, track inspectors, master carpenters, roundhouse foremen, storekeepers, etc., according to their special duties or interests. In addition, each holder of a departmental section is also given a copy of the General section. To the present time, 99 complete Manuals and 115 Sectional Manuals are distributed over the road.

Recognizing that, as the result of changes and progress, a static Manual would soon be out of date and confusing in many respects, if not a liability, provision has been made for revising all Manuals and Sectional Manuals currently, this work being handled by the same staff that produced the original manual material. Under the system employed, each Manual is numbered and a record is kept of its location. Likewise, record is kept of the holders of each individual section. Thus, as revisions are made in the manual material, copies of these revisions can be forwarded to those officers and employees interested.

Minor changes in manual material are covered by mimeographed errata sheets sent out by the manual supervisor, each bearing a specific number. The holder of each book or specific section is asked to insert these sheets in the appropriate place in his manual material, and is required, on a detachable section on each errata sheet or accompanying letter, to advise the manual supervisor that the material has been properly posted. Where substantial or complete revisions are made in any of the manual material, revised manual sheets are prepared and sent out—with the same check as to their proper posting in substitution for earlier sheets.

Thus, the D. & R. G. W. has opened the way for all of its officers and employees for personnel betterment, and better and more uniform practices in the interest of the railway. The total out-of-pocket expense for producing the Manual was approximately $10,000, which is in addition to the outlay of approximately $8,000 for the new printing and reproducing plant set up. That the Manual has achieved its purpose is attested by officers of the road generally, and that the expenditure involved in its production was highly justified, is evidenced clearly in the record of savings that have been made and continue to be made as a direct result of its use.

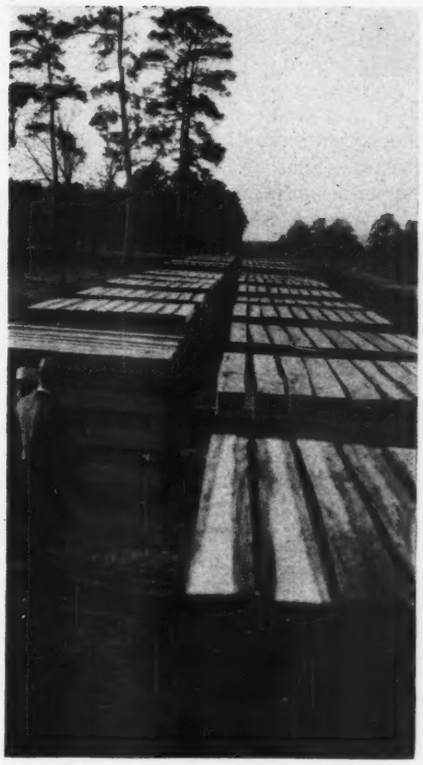
The development of the Manual was instigated by E. A. West, general manager of the road, while its formulation and production were carried out under R. J. Herring, manual supervisor and treasurer of the road, assisted by H. H. Ham, assistant manual supervisor.

* * *

A Dominion Atlantic Pacific Halts at Windsor, N. S., With Train No. 95, Halifax to Yarmouth

Producers Look at Crosstie Prospects

Face increased demands from railroads and war plants and increasing scarcity and demoralization of labor



Many Problems Face the Industry as It Endeavors to Meet the Increased Demands Resulting from the War

MORE than 100 executives of tie producing companies and railway officers concerned with the production and use of crossties gathered for the twenty-fourth annual meeting of the Railway Tie Association at the Netherland Plaza Hotel, Cincinnati, Ohio, on May 6-7. This meeting was the most largely attended in the history of this organization, and its program, likewise, was the most constructive ever presented. In both of these respects, the meeting reflected the serious concern of producers and consumers alike over the possible inadequacy of the crosstie supply in the face of enlarged requirements for government defense plants and railway rehabilitation, and the effect of the wage and hour legislation, selective military service and the high wages of armament plants and other industries on the supply of labor. All sessions of the meeting were presided over by Leonard Perez, president (vice-president, Wood Preserving Division, Koppers Company, St. Louis, Mo.).

Timely Reports and Addresses

The convention devoted much attention to the problems confronting the tie producer in these days, including reports on Manufacturing Practices, on the Use of Mechanical Equipment in the Production of Crossties, on Timber Conservation, on Changes in the Dimensions of Crossties During Seasoning, and on Legislative Developments. Important and timely contributions to the program were also made by railway officers and members of the tie producing industry in addresses on The Railways in Times of National Emergency, by E. M. Hastings, chief engineer, Richmond, Fredericksburg & Potomac, Richmond, Va.; on The Maintenance of Standards in a Period of Tie Scarcity, by W. D. Simpson, assistant chief engineer, Seaboard Railway, Norfolk, Va.; on The Maintenance Needs of the Railways in 1942, by H. R. Clarke, chief engineer maintenance of way, Chicago, Burlington & Quincy, Chicago; on Looking Ahead in Transportation, by Dr. Julius H. Parmelee, director, Bureau of Railway Economics, Association of American Railroads, Washington, D. C.; on Production Problems in the Crosstie Industry, by T. J. Turley, vice-president, Bond Brothers, Louisville, Ky.; on Labor as a Factor in Tie Production in 1942, by B. N. Johnson, district production manager, Wood Preserving Division, Koppers Company, Richmond, Ind.; and on The Outlook for Preservatives, by John N. Forker, vice-president, Tar and Chemical Division, Koppers Company, Pittsburgh, Pa. In addition, Col. R. S. Henry, assistant to the president of the Association of American Railroads, addressed the group on The Railways in War at its annual dinner on Wednesday evening.

At the closing session on Thursday, the following officers were elected for the ensuing year: President, David W. Bauer, vice-president, Potosi Tie & Lumber Company, St. Louis, Mo.; first vice-president, R. M. Claytor, plant manager, Southern Wood Preserving Company, Chattanooga, Tenn.; second vice-president, R. Van Metre, president, Wyoming Tie & Timber Company, Chicago; members Executive committee—John F. Renfro, vice-president, Taylor-Colquitt Company, Spartanburg, S. C.; T. J. Turley, vice-president, Bond Brothers, Louisville, Ky.; R. M. Hamilton, vice-president, T. J. Moss Tie Company, St. Louis, Mo.; and E. Whitehurst, general manager, American Creosote Works, Jackson, Tenn. At a meeting of the officers following the conclusion of the convention, Roy M. Edmonds was re-elected secretary-treasurer for another year.

President Perez Sounds Keynote

President Leonard Perez sounded the keynote of the meeting in his opening address when he said that every man, woman and child in the United States is today a direct or indirect participant in the war. Converting peace-time America to the war crisis is calling for a continuing process of readjustments to meet the inescapable demands of our huge military machine. To

win this war we must have unity of purpose and practical, voluntary co-operation. "As yet," he continued, "no industry committee has been appointed for the Lumber and Timber Products Industries, and I sincerely hope that we will be permitted to continue on the present basis. There has been no criticism of the manner in which this industry has performed in this emergency. As you are aware, we have been called upon not only to furnish an ever-increasing quantity of crossties for the railroads, which comprise a very vital defense industry, but also to supply the ever-increasing demands for crossties from the government for tracks at training centers and ordnance plants. I am glad to be able to report that these demands have been met with little or no delays and the members of our association can well be proud of this achievement, demonstrating that their production departments have been performing 100 per cent. However, we must not overlook the fine co-operation we have had from the railroads. They fully realize the importance of the government's requirements for crossties and have readily adjusted their programs, permitting the requirements of both the government and the railroads to be taken care of in an orderly manner. I urge the leaders of our industry, both management and labor, to continue in complete harmony, so that this program will not be disturbed."

Col. Henry Addresses Annual Dinner

At the annual dinner of the association, Col. R. S. Henry, assistant to the president, A. A. R., traced the relationship between the development of the railways and the mechanization of war, pointing out that mechanized warfare as we know it is not possible without rail transportation. It was in the Civil War, he said, that railway facilities were first used aggressively—from Louisville to Atlanta, in support of General Sherman in his march across Georgia. Incidentally, he pointed out that General Sherman insisted that all cars be unloaded immediately upon arrival at destination, a lesson that was forgotten in 1917-18.

Colonel Henry also pointed out that Hitler, in his campaign in Russia, has discovered that the railways comprise the backbone of modern war. He stated also that the Burma road, to which so much prominence has been given, includes 560 miles of narrow-gage railway with grades up to four per cent, but that even this railway has been able to deliver at Lashio twice as much tonnage as the thousands of trucks have been able to transport beyond that point into China over the highway. The limitation of highway transport is the fact that the trucks consume too much of their own cargo in fuel.

The Railways In Time of National Emergency

By E. M. Hastings*

In view of the developments of recent months, the railroads of this country must bear the war burden of transportation and to an extent greater than any reasonable person could have expected or foretold. You will recall that, only a few months ago, the Federal Petroleum Administrator said that it was not possible for the railroads to handle by tank car a sufficient amount of petroleum products to take care of, to even a small extent, the requirements of the East. Quietly, and without any confusion, the weekly and daily averages of the movement of petroleum products by rail to the eastern states has increased until the last compilation of just a couple of weeks ago shows a movement by rail of an average of 600,000 barrels a day—just three times what the railroads a few months ago modestly said they could handle—and I believe that the end is not yet. This is only one, but an outstanding, instance of the basic importance of the rail carriers to the country and its people in a time of emergency.

As we face the future, it is undoubtedly true that the railroads will be expected to handle more and more of the vast war production that is mounting day by day through the conversion of our great industrial plants to full war-time production of war material. With the constant expansion of our steel mills and the ever-increasing tonnage of steel products coming from them, the burden on the railroads will be correspondingly increased.

We should think about these things carefully and earnestly, because I do not hesitate to say to you that those who hold in their hands the power to apportion the materials needed by the railroads hold also in their hands the power to destroy or to make more efficient the railroads' operations. Surely it cannot be expected of the railroads that they transport more and more if they are given less and less. Therefore, I ask every one who is attending this meeting to lose no opportunity to bring to the attention of those in authority the need to keep the railroads in a healthful, well maintained and growing condition. The railroads cannot possibly perform their task of carrying on the necessary transportation for National Defense and National Offense unless they are furnished with the materials and are permitted to keep the men they say they must have to do the task. If we are to keep abreast of the demand, many thousands of freight cars must be built and many hundreds of locomotives constructed; miles of additional tracks must be laid; hundreds of thousands of tons of new rail must be installed; and crossties by the millions must be inserted.

There never has been a time in the history of our country when the railroads occupied a more important place than they occupy today, because largely in their hands lies the great task of moving the tremendous amount of manufactured materials for our armed forces; in the rail carriers' hands lie also the responsibility and the task for moving safely and efficiently great numbers of men to various places, from which places they will be dispatched to other scenes of action. With all this load, no great cry or complaint has been raised by the railroads; they have been moving earnestly and honestly, quickly and efficiently, all of the men and materials that they have been asked to carry.

Not long ago Mr. Eastman said that the railroads were doing a splendid piece of work and that he saw no need for government operation such as obtained during the last war. Let us sincerely hope that this situation will not change and that the railroads will continue to do an even better job.

* Chief Engineer, Richmond, Fredericksburg & Potomac, Richmond, Va.

Looking Ahead in Transportation

By J. H. Parmelee*

The operating statistics of the railways since 1939 tell the story of the herculean task which the railroads have faced, and have met, during the last three years. But the story is not yet fully told. Traffic in 1942, by a substantial margin, will exceed the levels of 1941. I look, too, for further increases in carloadings, ton-miles and passenger-miles in 1943, compared with 1942. As the result of these and other factors, the railroads of this nation are faced with a task of tremendous proportions.

Thanks to the foresight of the railroads industry, more than nine and one-half billion dollars were expended for capital improvements in the 18-year period 1923-1940, to make the railroad plant in the United States the most efficient traffic-carrying utility in the world. More than 70 per cent of these expenditures were made in the eight years, 1923-1930. Even during the lean years of the depression, this improvement program was carried on within the limits of the funds then in hand. It is unnecessary for me to remind you that the tie producing industry has had an important part in this improvement process."

No single factor is so essential to successful railway performance as the condition of its plant. In this respect, we are on

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solid ground. Furthermore, in 1941, the American railroads shattered all previous efficiency records. Both individually, and as an industry, they are better organized than ever before. There is, also, better co-operation with government agencies dealing with transportation.

At the beginning of the current year, there were slightly more than a billion crossties in the tracks of Class I railways. Of these, 840,000,000, or five out of six, were treated ties. This is in marked contrast with the situation during the first World War, when not more than one in every five ties in track was a treated tie. This reversal in the relationship of treated and untreated ties during the last two decades was the most important single factor in reducing annual tie renewals by roughly 45 per cent.

Tie renewals in 1939 numbered 45,088,000, in 1940, 43,621,000, and in 1941, 47,400,000, or an annual average for the three years of 45,343,000. Assuming the availability of adequate labor and materials throughout 1942, tie renewals may cross the 50 million mark for the first time in ten years. However, the rapidly expanding production program of our government, plus the calls for men to the armed services, will, no doubt, permit only partial fulfillment of the tie renewal program which the present volume of traffic will justify.

For the heavier traffic ahead, this year and next, the railroads will need the same high quality of materials and supplies that they have been getting in the past. The requirements of the war effort will, no doubt, restrict the quantities that the industry can buy, as well as necessitate substitutes in some things. It is essential, therefore, that we obtain the most efficient use from each item of material now on hand or to be purchased.

Transportation service is vital at every stage of our war effort, and it must be continued on a level adequate to the needs. Every railroad manager, every railroad employee, every government agency that deals with transportation, and every railway supply unit must be keyed to the greatest degree of efficiency ever generated in and for this great industry.

The Maintenance Needs of the Railroads in 1942

By H. R. Clarke*

There is a somewhat general idea that the present so-called "super speeds" have greatly increased track maintenance costs. If by this, reference is made to modern streamlined trains, correctly powered, either by Diesel-electric or properly designed and built steam locomotives, this idea is not correct.

It is true, that where the permissible maximum speed has been increased from about 70 m. p. h. to nearly 100 m. p. h., some track work has been necessary. Just what has had to be done has depended on the speed for which and the standard to which the track was previously maintained, and how much the speed was stepped up. No very large expenditure was necessary on the Burlington and, so far as I have been able to learn, this has been true on nearly all roads. Once our track was brought up to the new standard required for our Zephyrs, maintaining it for 100 m. p. h. by these trains has not been difficult or expensive. Naturally, it costs more to keep track in shape for 100 m. p. h. than for 60 m. p. h., but once the necessary standard is attained, the added cost is not great. It is mostly a matter of careful attention to detail and of doing what needs to be done when it should be done—not postponing it.

It is my well considered opinion, that if the modern "super speed" trains were slowed down or even taken off entirely, while the trains, which, for lack of a better term, I will call the No. 2 trains, were continued in operation at their present speed, somewhat slower though it is. there would be no reduction in maintenance costs. Furthermore, if the speed of these trains was reduced, or if passenger trains were taken off entirely, but freight traffic continued at present speeds, there could be only a slight reduction in the maintenance expenditures, and this would be brought about largely by the decrease in the number of units using the track, and a lower standard of maintenance, since riding comfort and appearance would largely cease to be factors —strength of track structure and safety only being considered.

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While there may be a difference of opinion as to the proper speeds of passenger trains, there is, I think, little if any difference of opinion with regard to the speed at which freight traffic must be handled. Here the demand is that the capacity to handle tonnage be increased, and it is desirable that all material in the war effort be moved as speedily as possible.

The traffic density and the tonnage handled over a line have a definite bearing on the maintenance necessary. The effect on rail, frogs and crossings is direct. On ties it is also most important, but not so definite and direct as on rail. The effect on ballast is substantial, but even more indirect than on ties and, as already mentioned, some items of maintenance cost are in no way influenced by traffic. Labor, which is a large part of the total cost, is decidedly affected. While it is true that a certain standard of maintenance is necessary for operation at a given speed, whether one train or one hundred may be operated, it is also a fact that much more labor and material will be required to maintain that standard for 100 trains than for one, not only to make good the wear and tear on material, but also to restore and keep up the line and surface of track and bridges.

Everyone admits that the railroads are the backbone of the transportation system of our country, and must carry the war load. Everyone knows and admits that the war would be lost if the railroads should fail. It is also freely stated that never before have the roads given such splendid and reliable service. They can continue to do this, if given a fair chance. But I fear the great danger is that those in authority are taking this fine performance for granted and, without thinking, believe it will continue regardless of the treatment that the railroads receive. They do not seem to know that without steel and other material for cars, locomotives, tracks and bridges, steel for shells, guns, ships and planes is as worthless and useless as if the ore was still in the mine.

In at least one item, a carefully studied, conservative estimate has been made of 1942 material requirements for maintenance. That is for rail. Look at the record. The average tonnage of rail laid per year for the last 20 years was 1,332,100. The requirements in 1942 have been estimated at 1,600,000 tons. In my opinion, this estimate is none too high, but I doubt that we will get this amount of rail.

So far as I know, no estimate has been made as to ties required in the immediate future; therefore, I venture to make a guess of my own, based largely on the tie condition on the lines of which I have some personal knowledge. That guess is, that if present practices in tie production, treatment and protection are continued, and with traffic conditions as at present, an increase of 10 per cent over the 1941 renewal figures, or about 50,000,000 ties a year, will be necessary to bring about and maintain a satisfactory tie condition. This would mean an average service life of about 24 years from all ties.

At the present time, it would seem that revenues will make increased expenditures possible. The chief concern of railway maintenance and executive officers just now is with regard to securing the needed materials and the availability and efficiency of the necessary labor.

Maintenance of Standards In Periods of Tie Scarcity

By W. D. Simpson*

Among the many difficult situations that are being imposed on the railroads by the present emergency is an indicated crosstie shortage in many parts of the country. It isn't alone the fact that we may not be able to get the quantity of ties needed that concerns us, or that it will be difficult to get them; it is also the temptation presented by the situation to lower our standards and thus destroy in a year or two the results of 20 years' work in building up and improving the quality of our ties. If we allow this to happen, it will be an economic error and a pity.

The excellent quality of tie stocks to be found today in the yards owned and operated by commercial tie producers and in those operated by railroads did not just happen. These ties are the results of many years of planning and organization. Specifi-

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cations had to be written and revised as study and changed conditions necessitated. Men to produce these ties had to be trained. We have learned the kind of ties that are needed; we have told the producers and they have produced them in a highly satisfactory manner.

You men who have produced the ties that we are using today have a right to be proud of the part that you have played in building up the railroads to the point where they can handle the present volume of traffic at the speeds now necessary.

The quality of track surface on practically every Class I railroad of the country is far better today than ever before. If that were not so, our rail transportation would be in a sad condition. The better ties now being used are an important factor in that improvement. More extensive use of treatment and improved standards have produced these better ties, and it must not be overlooked that these improved standards were adopted to a large extent during the recent years of depression, notwithstanding the fact that many railway managements were confronted with difficulty in paying for the ties we needed. To allow anything to happen now, that can be avoided, that will tend to destroy the present very satisfactory quality of ties now used generally, will be a misfortune.

The present emergency will tempt many to accept sub-standard ties. Some of us will get nervous as our stocks become lower and demands become greater. Under such conditions, it isn't beyond the realm of possibility that our managements may find it necessary that we get ties, without regard for present high standards.

The need for ties today on some roads is urgent because of the many ties being used in tracks constructed to serve military establishments. It is doubtful if anyone knows the number of ties that have already been used or that will be required in the construction of such tracks. On one railroad, the number of ties furnished for such construction, and for auxiliary tracks constructed by the railroad because of that service, has, in the last several months, amounted to one-fifth of the annual requirements of the road for normal maintenance, and these demands are continuing. They appear overnight and must be met promptly, without an opportunity to prepare for them.

In some instances, instead of the railroads furnishing the ties, contractors acquire them, and, apparently, under a variety of specifications. I say variety, because in the last few months I have known the requirements to vary from one calling alone for Size 3 mixed oaks, untreated, bought by a contractor without inspection, to a demand for all Size 5, creosoted, meeting proper specifications. In territories where conditions such as this prevail, the railroads find production demoralized, and much time, effort and expense are necessary to get standard ties produced again. Price competition presents a temptation to depart from our standards, but we should not yield. In the end, we will be better off if we pay more for ties and insist upon the qualities we need.

One of the most undesirable effects of any lessening of our tie standards would be on the morale of our forces that use the ties. There is not a trackman or track foreman of long experience in the country who would conscientiously subscribe to the thought that we can afford, in any particular, to let down in our present physical requirements for ties.

A lessening of standards for ties does not increase the supply. Its over-all effect simply lowers the average quality and average life of all ties obtained. What we buy in a crosstie is service life, but the kind of service we get from that tie during its service life is also of great importance. It is possible to produce ties that will have a satisfactory length of life, but which, because of their shape, will be unsatisfactory for the purpose for which we use them, It is ties that can produce and maintain a uniform foundation for the track throughout a long life that are needed.

No matter what the cost of poorer ties, there can be no economy in their purchase, because either their service life or the quality of their service will be less, with the result, beyond doubt, that the cost per tie-year in service will be increased, increasing maintenance costs generally. And, since the use of inferior ties results in shortened average life, there can be no suggestion that conservation is promoted.

We cannot estimate how long this present emergency will last, neither can we predict when the period of financial adjustment will come. With this in mind, every tie placed in our permanent tracks should be a long-life tie, so that our track structure will withstand whatever the future may require of it. If it is necessary that we get along with fewer ties during this emergency, that is another reason why we should insist on ties competent to do the job.

The Outlook for Preservatives As a Factor in Crosstie Supply

By John N. Forker*

Import creosote used for treatment during 1931 amounted to 27 per cent of the total volume of creosote and creosote solutions used during that year. This decreased in volume and percentage during the next five years, until 1937, when the quantity imported increased over 1931, but the percentage was less, being only 19 per cent. This situation also prevailed in 1940, when again the volume of imports was greater than in 1931, but when the percentage of the total used was only 17 per cent. In 1941, the percentage of import creosote used was considerably reduced, yet domestic producers were able to increase their production enough to take up this deficiency and to supply the additional oil necessary for increased treatment. I feel certain that when the final figures for 1941 are compiled and tabulated the gallons of creosote and creosote solutions used will greatly exceed those of 1940.

When we consider the amount of imported creosote oil used during the years 1931 to 1940, which varied from 27 per cent to 17 per cent of the total creosote used, and furthermore, the decrease in the amount of import creosote in 1941, which was a big year for the wood preserving industry, we must come to the conclusion that the tar distillers of this country produced as much and probably more creosote in 1941 than the total consumption of an average earlier year. Now, if crosstie treatment requires only 54 per cent of the total creosote used, which has been the case in recent years, it is easy to see that there is little likelihood of a shortage of creosote for the tie industry. In fact, it would not surprise me to find a shortage of ties more probable.

The production of creosote oil is, in the main, a uniform process that must be spread out over the year. If the demand comes too early or too quickly, there are bound to be some temporary and local shortages. Other than this, the most unfavorable factors in the creosote situation at present appear to be problems of transportation. So far as I can see, there is no lack of creosote oil production facilities. There will be no real shortage of creosote oil for the wood preserving industry, and, if the ties are produced, they can be treated and furnished to the railways.

T. J. Turley Discusses the Problems of the Tie Industry

The special problems of the tie producing industry in the present emergency were brought out clearly by T. J. Turley, Jr., vice-president of Bond Brothers, Louisville, Ky., speaking essentially from the standpoint of tie production. The burden of Mr. Turley's address lay largely upon the difficulties confronting the industry in the application of the wage and hour law, but, among other problems, with specific regard to "purchase or custom" ties, he also cited the difficulty at times of securing ties that will stand up for grade when sold to the railways; the problem of getting new producers started off properly; and also the problem of locating buyers or yardmen at points where they will pay their way—that is, in locations where there will be enough ties delivered to make a yardman a paying proposition.

Even with regard to company-produced ties, Mr. Turley saw many problems—but, "obviously, the most serious problem, for both the tie companies and the sawmill operator," he said, "is to conform in all respects to the wage and hour law, and particularly in view of the manner in which it is sometimes administered." Further in this latter regard, he said, in part, as follows:

"Most of us feel that the fundamentals of the wage and hour

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law are probably all right. I do not believe, however, that it was the intent of Congress to burden the tie industry or other small industries with such a complex law as this one has developed into with all of the technical administrators ruling and interpretations. The law should be elastic enough to allow the sawmill operators to do the things that are necessary and that have always been done by honest sawmill men, and which are not hostile to either the employee or employer."

At another point in his address, Mr. Turley cited facts to show that the tie-producing industry is, to a considerable extent, a seasonal industry; spoke of the hardship of the rigid 40-hr. week under these conditions; and said that, "at the very least, we should be allowed to operate 50 hrs. a week, when weather conditions will permit, before paying overtime, and even then, I doubt very seriously if we would get an average of 40 hr. per week for the entire year."

In closing he suggested that the association appoint a committee that will seek to secure some relief for the industry from the provisions of the wage and hour law. "This, as I see it," he said, "is our most important problem, and one that demands quick action if production in our industry is to be increased."

Report on Shrinkage of Crossties During Seasoning

To find the correct answer to the controversial question that has been before the industry for some time as to the change of dimensions of crossties during seasoning, a committee of which R. M. Claytor, plant manager, Southern Wood Preserving Company, Chattanooga, Tenn., was chairman, which committee has accumulated data for five years, made a detailed report covering studies in which more than 18,000 measurements were taken, recorded and summarized covering ties of red oak, white oak, black and tupelo gum and Southern yellow pine. In large measure, the report was a series of four tables presenting measurements as to the width and thickness of the ties at opposite rail bearing points.

A study of 400 pine ties showed that, under the worst conditions, only about 4 per cent of the ties showed shrinkage in excess of 0.16 in., and that in practically no cases did the net shrinkage exceed 0.25 in. Analysis of 788 red oak ties showed that from 11 to 18 per cent of the measurements indicated shrinkage up to 0.25 in., and that between 5 and 11 per cent of the ties indicated shrinkage in excess of 0.25 in.

Measurements on 521 white oak ties showed that a shrinkage of between 0.16 in. and 0.25 in. can be expected in such ties in proportions ranging from 7 to 21 per cent, and that, in addition, between 6 and 16 per cent of such ties can be expected to shrink in excess of 0.25 in. Study of 414 gum ties showed that between 20 and 40 per cent of the ties evidenced shrinkage between 0.16 in. and 0.25 in., and, in addition, 1 to 9 per cent showed shrinkage in excess of 0.25 in.

In conclusion, the committee pointed out that very little shrinkage may be expected in pine crossties during normal seasoning periods. It is true, however, it said, that red oak, white oak and gum ties show a distinct tendency to shrink during seasoning period.

B. N. Johnson Sees Labor Situation Critical for Producers

Amplifying with considerable emphasis the labor problems in the tie producing industry referred to by earlier speakers, B. N. Johnson, district production manager, Wood Preserving division, Koppers Company, Richmond, Ind., viewed the labor situation as critical from the standpoint of both producers and customers. In the face of a demand for crossties exceeding that for a number of years in the past, the tie industry, he said, is confronted with a supply of labor that is diminishing in amount, character and efficiency. This situation, he pointed out, has been created and promises to be further aggravated by many factors, including the country's industrial war activities with their higher wage rates; the selective service, which is taking many of the younger men in the tie-producing areas and increasing the average age of men available for producing ties; an increased rate of turnover, which, in the tie industry, under normal conditions, is among the highest in American industry; the competition of other forest products industries, and of many tie mills which have been converted to lumber manufacture—with a wage scale higher than in the tie producing industry; farming, under the government's plan for increased production in the face of a scarcity of farm labor; some unionization effort among employees, which is having the overall effect of increasing costs; and the rubber tire and truck situation, which is causing complications in the handling of logs and finished ties, with steadily increasing costs. In addition to these problems, Mr. Johnson did not overlook the problems being created in the industry by the Wage and Hour law, which, he said, has increased the wage minimum of 24 cents an hour in southern territory in 1934 to a present minimum wage for sawmill workers of 35 cents an hour; brought about a rigid 40-hr. week; and established a minimum hourly wage of 52½ cents for all work performed over 40 hr.

Emphasizing that the tie producing industry can attract and hold labor only if it is willing to compete in the labor market for the good men that are available, Mr. Johnson said in conclusion, that the solution of the tie producer's labor problem lies essentially in the willingness and ability to pay a wage rate which, in relation to the competition of other work, will be sufficiently attractive that men will be willing and content to work in the woods.

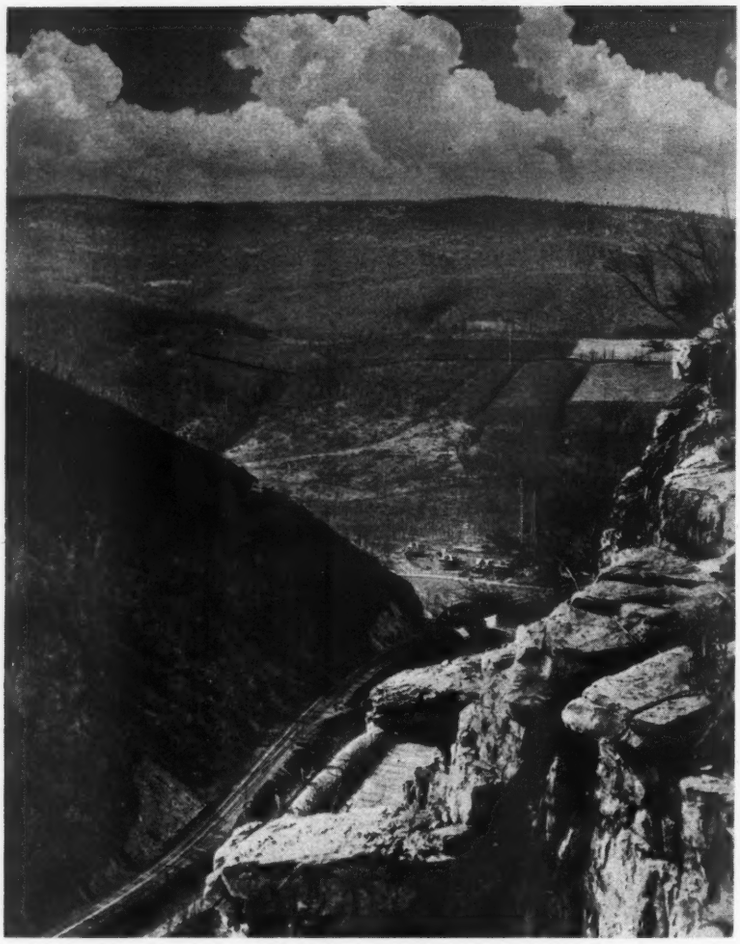
Reports on Manufacturing, Conservation and Legislation

In the report of the Committee on Manufacturing Practices, of which John Wright, Wood Preserving Division, Koppers Company, was chairman, the committee stated that tie manufacturing practices have been and are being affected adversely by the loss of skilled labor to military service, war production and the farms; the difficulty of small mills to understand and comply with the intricacies of the wage and hour law; and, of no small consequence, the shifting of some tie mills to the manufacture of lumber as the result of a higher price incentive. Also, procurement, it said, has been handicapped by the lack of trucks necessary for the movement of logs to the mills and ties to concentration points. The increased cost of railroad ties during the last year, it pointed out, reflects not only these difficulties, but also the higher wages and salaries generally throughout the industry due to the increased cost of living and competition.

The Committee on Timber Conservation, of which John F. Renfro, vice-president, Taylor-Colquitt Company, Spartanburg, S. C., was chairman, reviewed its work during the year in the interest of further timber conservation and stressed that the contributions that the forests of the United States are making toward our war production efforts—in the building of cantonments, the extension of railroad facilities, and in the actual construction of factories—is additional evidence of the importance of a forestry program that will insure a perpetual supply of forest products. Had the loose practices of a generation ago with respect to our forests continued to prevail during the last 15 or 20 years, it said, it is doubtful if our forests could have supplied the unusual demand made upon them during the last two years.

Supplementing its report, Chairman Renfro introduced Frank Heyward, general manager of the Southern Pulpwood Conservation Association, who spoke of the activities of his association in wood conservation, illustrating his remarks with lantern slides.

The Legislative committee of the association, of which R. H. White, Jr., president, Southern Wood Preserving Company, Atlanta, Ga., was chairman, reviewed national and state legislation affecting crosstie producers directly and indirectly. He referred especially to the ramifications of the Fair Labor Standards act and to the prohibition of shipment in interstate commerce of any crossties that are not produced in complete conformance with this act. He referred also to the effect of increasing taxes on crosstie production and reviewed legislation now in contemplation affecting both tie producers and the railroads.



The Western Maryland Operates Through Rugged Mountain Territory

Coal for the Country's Furnaces

Western Maryland contributes to the war effort with unique and efficient operation

COAL is one of the basic commodities in production activities, and in the efficient transportation of coal, the Western Maryland is contributing much to the national effort. Its operations of this character are extremely varied, ranging from the running of coal trains of 10,000 tons and over at comparatively high speeds over certain sections of the railroad to other operations over rough mountain terrain where a helper is required for each ten loaded cars and trains with ten locomotives are not uncommon. This latter operation takes place over the W. M. lines in central West Virginia and is but one of the many problems involved in getting coal from several fields on the west end of the railway.

Despite the difficulties of operation on certain portions of the railway, high efficiency is maintained, as indicated by the following operating statistics, comparing the peak year of 1929 with 1941.

	1929	1941	Increase or Decrease
Gross Revenue	$18,985,706.79	$22,810,109.83	$3,824,403.04
Gross Ton Miles (Excluding Locos. and Tenders) (Thousands)	4,307,662	5,388,762	1,081,100
Number of Locos. Owned (Freight)	234	214	-20
Average Tractive Power	65,306	68,787	3,481
Gross Ton Miles Per Freight Train Mile	2,626	2,990	364
Gross Ton Miles Per Train Hour	23,068	32,901	9,833
Pounds of Coal Per Thousand Gross Ton Miles	222	197	-25
Number of Freight Locomotive Failures	1,009	266	-743
Miles Per Failure	3,291	13,923	10,632
Miles Per Locomotive Day	34.8	47.5	12.7
Car Miles Per Car Day	26.4	37.7	11.3

Coal is the most important traffic on the Western Maryland, amounting to about 50 per cent of the total tonnage. This percentage has been declining for some years, but not because of a diminution in coal traffic. Rather, by good service and alert traffic sales methods, the W. M. is increasing its tonnage of commodities other than coal, particularly on the high-speed, east-west through freight line between Connellsville, Pa., Hagerstown, Md., and the East.

Where the Coal Is Mined

In recent years, quite a number of mines on the line have been abandoned because of the depletion of the coal seams, but this tonnage has been offset by traffic from new mines.

At the time the extension from Cumberland, Md., to Connellsville, Pa., was completed in 1912, it was intended primarily to form an important link with the western lines, and one of the main objectives was the movement of grain to Baltimore, an elevator having been built at Port Covington there to further serve this traffic. This line still serves its original purpose, but a few years after its construction, the W. M. acquired isolated branch lines in the Somerset, Pa., and Fairmont, W. Va., coal fields. As is shown on the accompanying map, the W. M. has no direct connection between these branches and its main line but has worked out trackage rights in each case.

In the Fairmont field, Pittsburgh gas coal, running high in volatile, with fairly low ash and sulphur content,

is mined. The Somerset field produces coal with a much lower volatile content, but which is a high grade steam coal.

The branches in the Fairmont field consist of the Fairmont-Helen's Run, extending between Chieftain, W. Va., and Ida May, 3.7 miles, with a spur between Carolina Junction and Carolina, 1.6 miles; also the Fairmont-Bingamon, between Hutchison, W. Va., and Wyatt, 8.5 miles.

Coal from the mines on these branches is handled to the main line by trains operating under trackage rights over the B. & O. from Hutchison, W. Va., to Bowest Junction, Pa., 79 miles, and another W. M. branch from Bowest Junction to Bowest, 1.5 miles.

The Somerset Coal field is served by five miles of track and spurs in Pennsylvania. It is reached by trackage rights over the B. & O. between Coal Junction, Pa., and Rockwood Junction, 22 miles. The segregated George's Creek branches in Maryland are also served by trackage rights, in this case over the Cumberland & Pennsylvania, between Tannery, Md., and Westernport, 10 miles. These branches were formerly connected with the main line, but this connection has been abandoned, since operation over the C. & P. gave a better grade line and shorter distance. The coal from all these outlying branches reaches the W. M. at different junctions, but the classification is centered at Cumberland, Md., along with the coal arriving at that point from the Elkins line.

A Coal Railroad

The line from Cumberland to Elkins, 112 miles, and the branches beyond are essentially for the handling of coal, although general traffic is increasing. This line, including the Belington and Huttonsville branches, was formerly the West Virginia Central & Pittsburgh. The traffic handled originally consisted principally of coal and lumber, but the lumber has now largely been depleted and coal remains the principal item of originating tonnage. There are several large mines on this line between West Virginia Central Junction and Thomas.

The former Coal & Iron, between Elkins, W. Va., and Durbin, 47 miles, was acquired as a connection with the Chesapeake & Ohio. However, within the last ten years, a portion of the Sewell seam was found to be mineable along this line, although the production is not very large because of the thin vein. Between Elkins and Cheat Junction, the C. & I. serves as a connection with one of the most unusual sections of railways in the country, the former Greenbriar, Cheat & Elk, which was acquired by the W. M. in 1927.

Unusual Operations

The G. C. & E. extends between Cheat Junction, W. Va., and Webster Springs, 88 miles, crossing the backbone of a mountain range and reaching an altitude of over 4,000 ft., the highest point reached by a standard gage railway in the East. The W. M. operates the line between Cheat Junction and Bergoo, 75 miles, and the portion of the line between Bergoo and Webster Springs, 13 miles, is leased to the West Virginia Midland. Several narrow-gage logging lines connect with the G. C. & E., but the principal tonnage is coal and an average of 150 cars of this commodity are loaded on this portion of the railroad daily.

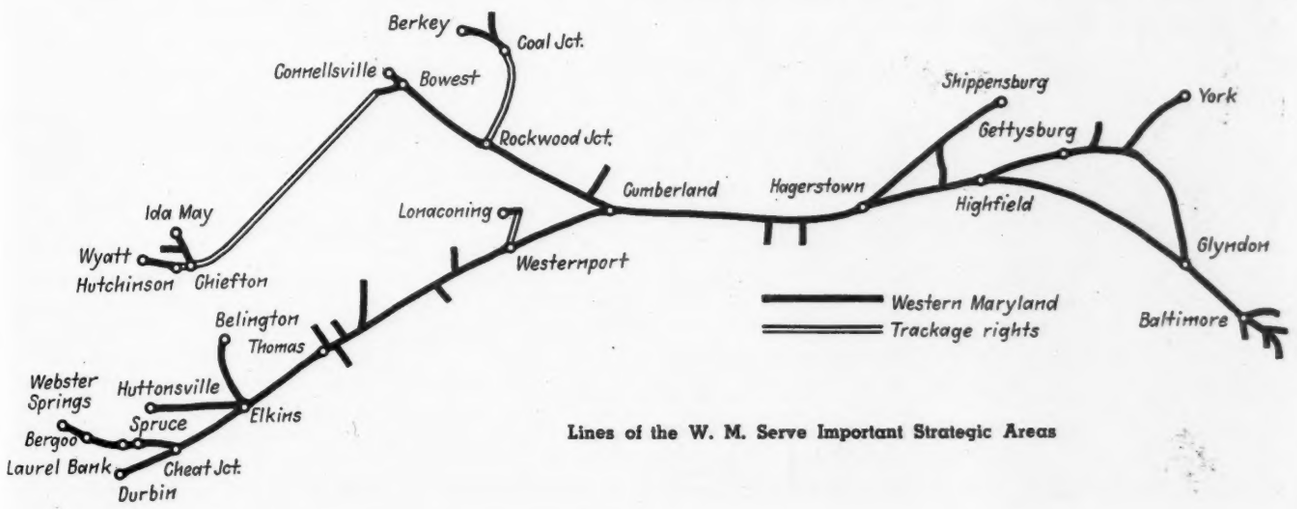
When the W. M. took over actual operations of the G. C. & E. in March, 1928, it found the property in a run-down condition. Track work had been neglected for some time, the rails were light, kinked and of irregular lengths and the bridges were in a sad state of disrepair. By the expenditure of considerable sums and by careful planning, the railway has been brought up to a standard adequate for the purpose it serves. It is now laid with 90-lb. rail on treated ties, bridges have been strengthened and maintenance is current and continuous rather than sporadic.

However, it was not possible to do anything about grade and curvature without an extensive and extremely expensive line relocation and the topographical features of the railway remain much as they were originally. Between Bergoo and Laurel Bank, 21 miles, the line runs at the bottom of a deep, narrow valley, with a ruling grade of 1.5 per cent against loaded trains and considerable curvature, although none of the curves are particularly sharp.

From Laurel Bank to Summit, a climb of over 3,000 ft. is made in 12 miles, and this includes an almost constant 3.7 per cent grade, uncompensated, against loaded traffic, with practically no tangent and almost every variety of curve up to 30 deg.

Operations Under Difficulties

For many years, it was considered impossible to operate over this line with straight-connected locomotives and trains were hauled with some of the largest Shay geared locomotives ever built. These were 4-4-4-4's, with 46-in. driving wheels, 17-in. cylinders, 200-lb. steam



Lines of the W. M. Serve Important Strategic Areas

pressure, total weight of 302,400 lb., and tractive power of 52,200 lb. These were expensive to operate and maintain, and the cost of operation per 1,000 gross ton miles was well over $1 for some years, being 95 cents per 1,000 gross ton miles in 1934, the last year the Shays were operated. In 1941, separate costs were not kept for this particular line, but the total cost of the entire district west of Elkins, including many light traffic branches, was only 67 cents per 1,000 gross ton miles. This decrease was brought about through improvement in the line and through the operation of straight-connected instead of geared locomotives.

The engines now used are H-8 type, 2-8-0 Consolidations, equipped with super-heaters. They have 25-in. cylinders, 52-in. drivers and carry 200 lb. steam pressure. Their total weight is 244,500, or 57,900 lb. less than the Shays, while their tractive power is 61,298 lb., or 9,098 lb. greater. As stated previously, the capacity of each Consolidation up the steep grade from Laurel Bank is ten loaded cars. The maximum tonnage handled up this grade is 6,500 tons, and the average tonnage is about 4,000 tons.

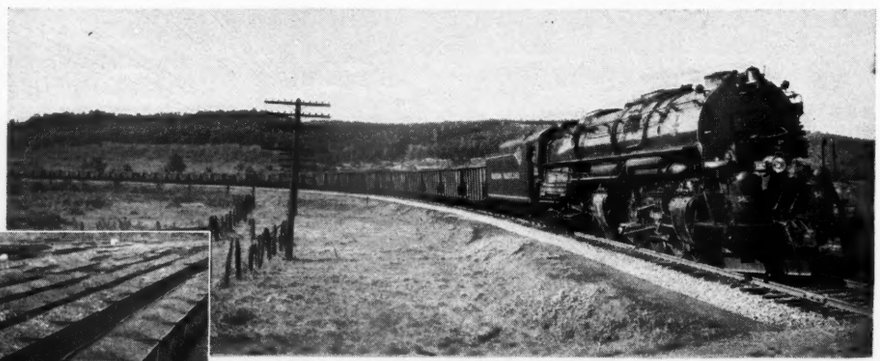
A Unique Terminal

The center of operations for the G. C. & E. is at Spruce, W. Va., an engine terminal and yard that are unique in many respects. In the first place, they are situated on a mountain top at over 4,000 ft. elevation, the highest terminal in the East. They are also unique in that there are no highways of any kind anywhere near them and, except for the railway, the only means of reaching them is on foot or on horseback; for some months each winter, heavy snows make even this approach difficult and frequently impossible. The 55 men, all employed by the W. M., who make this their headquarters, live in company houses with their families. The railway provides a schoolhouse and employs a teacher at Spruce for the children of employees. Since there is no passenger service on this portion of the railway, when the services of a physician are required, he is brought in by track motor car. Coal, water and sanding facilities are maintained at Spruce. The terminal also includes small locomotive and car shops, and is a section headquarters.

The method of operation followed on this line is to concentrate the loads at various yards while the empties are being distributed, then take as large a train as possible up the heavy grade to Spruce, with the assistance of helpers that have been engaged in mine run service. The West Virginia Midland brings coal into Bergoo, where four engines are kept at all times by the W. M. to serve several mines in that vicinity. Empties are brought down the hill from Spruce by a "hill crew", and distributed to the mine tipples from there. In the same manner, loaded cars are pulled from the mine yards and concentrated in the small yard at Laurel Bank at the foot of the mountain.

The cost of helper service on this district amounts to about 45 per cent of the total operating cost. For this reason, helper engine operation is scheduled at times and runs where it will do the most good, and helpers make up trains of from 70 to 90 loaded cars for hauling up the grade to Spruce from Laurel Bank. From Spruce, which is two miles beyond the high point at Summit, there is a descending grade of 1.67 into Cheat Junction, 39 miles, and from that point to Elkins, the line is located in a broad valley and is relatively level, so that no acute

Right: A 10,000-Ton Train of Coal on the Main Line of the W. M.



Below: Coal Forms the Principal Single Item of W. M. Traffic

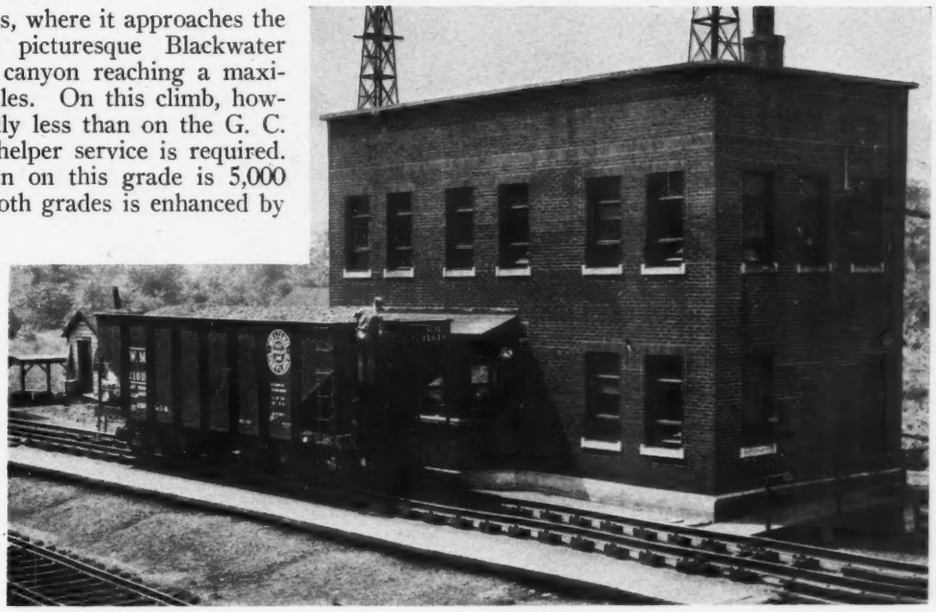
operating problems are encountered east of Spruce. Under this system of operation, coal from the extreme west end of the railroad (off the West Virginia Midland) is moved into Bergoo in the forenoon, passes through Elkins early the following morning and arrives at Cumberland, 222 miles from Webster Springs, on the following day for classification and movement east.

East from Elkins

Until arrival at Elkins yard, no classification is made. The cars remain in the Elkins yard only a short time and the only classification made there is the segregation of the relatively small amount of westbound coal from the eastbound. Coal from the other branches is also added and the trains are dispatched to Cumberland.

East from Elkins the line traverses a broad valley at easy grades for 12 miles; then, after a 2-mile climb involving a 2.35 grade, the line descends at the same maxi-

mum grade for the next 8 miles, where it approaches the stiff 17-mile climb through picturesque Blackwater canyon; the line through the canyon reaching a maximum grade of 3.75 for 6.1 miles. On this climb, however, the curvature is materially less than on the G. C. & E. hill, although extensive helper service is required. The average tonnage per train on this grade is 5,000 tons. Efficient operation on both grades is enhanced by hot water jet rail washers on all locomotives, which are connected directly with the boiler jets just back of the rear drivers. These were installed primarily for washing sand from the rails, an important function when it is considered that all loaded trains on these grades have from five to ten locomotives. In the winter time, the washers are also extremely useful in clearing snow from the rails.



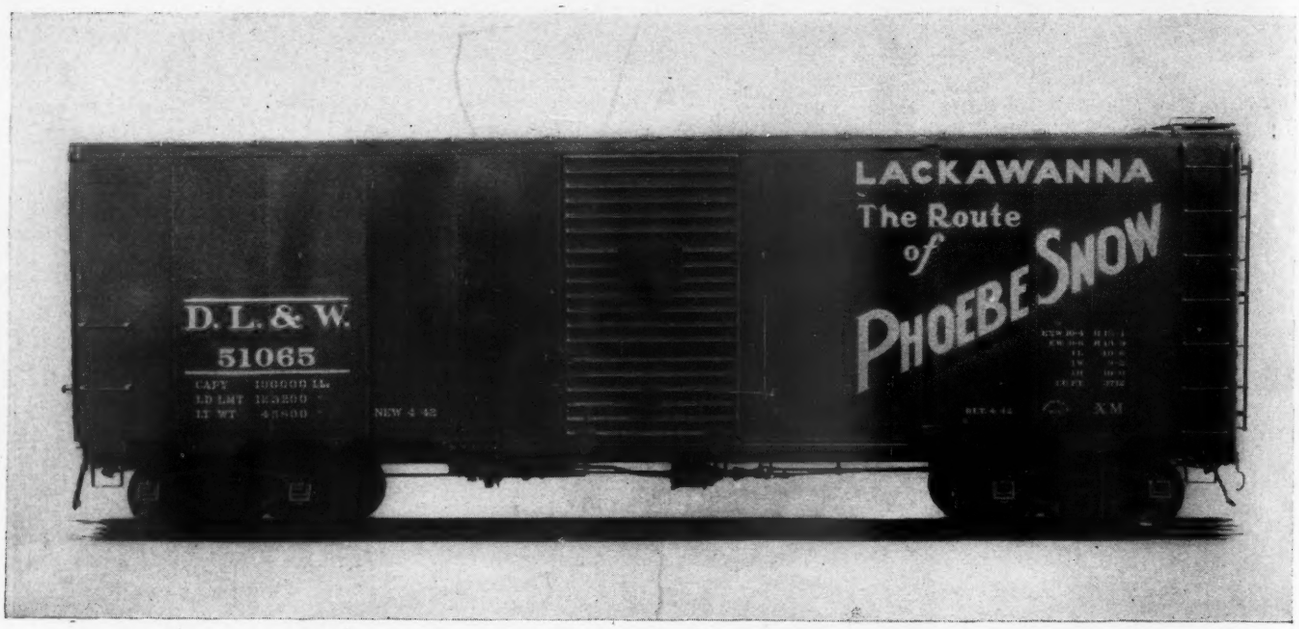
A Modern Track Scale Is Maintained at Knobmount Yard

At Thomas, just beyond the summit of the Blackwater canyon grade, there are several mines and the loads from these mines are used to fill out tonnage on the trains that have come up the grade. Further fill-outs are made at mines between Thomas and Cumberland, since the line descends into the Potomac valley and follows a river grade all the way to Knobmount. Here the principal coal classification yard is located, directly across the Potomac river from Cumberland proper. It has a capacity of 2,500 cars and is equipped with rapid-weighing scales and other facilities necessary to a modern coal yard, including floodlighting for night operations.

Eastbound coal from all of the operations described, after being consolidated, weighed and classified at Knobmount, moves over the main line from Cumberland to Hagerstown, 80 miles. The grades against the direction of loaded traffic are easy, the most severe being an ascending grade of 1.1 per cent for seven miles, from Williamsport to Hagerstown. On this line, new 4-6-6-4 single expansion articulated locomotives with a tractive force of 95,000 lb. purchased in 1940 from the Baldwin Locomotive Works are used. The mechanical features of these locomotives were described in detail in the *Railway Age* of January 25, 1941, page 209. They regularly handle 10,000 tons of coal at average speeds of over 40 m.p.h. from Cumberland to Hagerstown and have handled 11,670 actual net tons of coal in one train. After passing through Hagerstown yard, the coal moves in several directions, as shown on the map, the majority being hauled by the W. M. to Shippensburg, Pa., 35 miles, for delivery to connections there for movement to eastern metropolitan centers and New England.

* * * *

Trains on the Boston & Maine's Eastern Division Pass Through a Large Train Shed at Salem, Mass.



One of the D. L. & W. Double-Sheathed Box Cars Built by the Magor Car Corporation

D. L. & W. 50-Ton Box Cars

Magor Car Corporation delivers double-sheathed box-cars of A.A.R. standard design—Lightweight 45,800 lb.

DELIVERY is now being made of 400 fifty-ton general purpose box cars from the Magor Car Corporation's plant at Passaic, N. J., to the Delaware, Lackawanna & Western. These 40-ft. 6-in. steel-sheathed wood-lined cars conform in all essential details to the approved 1937 A. A. R. type car of this class. With this series of cars, the Lackawanna is reviving its use of the Phoebe Snow emblem. The 400 cars being built by Magor are a part of a construction program of 1,000 cars approved by the road's management in 1941.

Underframe Details

The center sills are constructed of A. A. R. standard Z sections welded from buffer to buffer along the top flanges. The side sills and end sills are rolled-steel angles. The body bolster is of the built-up type with the bolster top cover plate extending from side sill to side sill, and the bottom cover plates extending from the side sill to the body bolster filler. The cover plates are both welded and riveted in place. The body side bearing braces are of the built-up welded type and are applied between the bolster diaphragms. The cross bearer diaphragms are of plain carbon steel pressed to the required shapes. The floor supports are made of 4-in. Z bars and extend from end sill to end sill in five sections. The buffer and front draft lug are built up by welding and riveting, and the buffer is designed for the use of the Union centering device. The Symington-Gould Corporation and the National Malleable & Steel Castings Company shared in the order for Type E bottom rotary-operated 6¼-in. by 8-in. straight-shank couplers and yokes. The draft gears were furnished by Cardwell-Westinghouse.

Body Construction

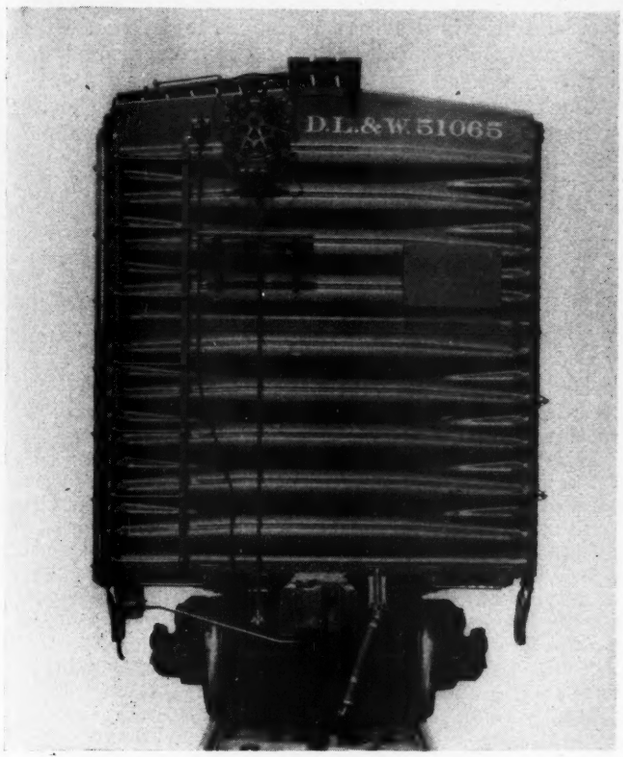
The side sheathing is of copper-bearing steel 0.10 in. thick with full lap joints at all side posts. The side posts are A. A. R. 3-in. Z bars and the door posts are 4-in. by 3-in. by ¼-in. rolled steel angles at the door opening which is 6 ft. in width. The corner posts are formed W sections which are riveted to the ends, sides, side plates and side sills. Dreadnaught steel ends are applied in two sections. The side doors were furnished by the Youngstown Steel Door Company, using Camel roller lift fixtures. The roof is of No. 14 gage galvanized copper-bearing steel as manufactured by Standard Railway Equipment and the running boards are of select grade yellow pine.

All side lining is of select grade yellow pine dressed to 1 3/16 in. thick by 5 1/16 in. face, tongue-and-grooved.

General Weights and Dimensions of the Delaware, Lackawanna and Western 50-Ton Box Cars

Light weight, lb.	45,800
Length inside, in the clear, ft.-in.	40- 6
Length over couplers (knuckles closed, extreme), ft.-in.	44- 8⅝
Width inside, in the clear, ft.-in.	9- 2
Width over side plates, ft.-in.	9-10⅜
Width of side door opening, ft.-in.	6- 0
Height inside, in clear at eaves, ft.-in.	10- 0
Height from rail to top of floor, ft.-in.	3- 7¾
Height from rail to top of running boards, ft.-in.	14- 6½
Height of side-door opening, in the clear, ft.-in.	9- 4 11/16
Truck centers, ft.-in.	30- 8½
Cubic capacity, cu. ft.	3,712

Each board extends in one piece from the door post cap to the steel end. The end lining is of the same grade of pine and is likewise applied in a single piece vertically on the car ends. Select yellow pine, 1¾ in. by 5 1/16 in., is used for the flooring and the joints are caulked



Brake End of the Lackawanna's 50-Ton Box Cars

with Milar red caulking cement. The floor boards are held in place by MacLean-Fogg water-tight bolts.

Brake Equipment and Trucks

The air brakes are the AB 10 type freight brake furnished by Westinghouse, and the cars have Ajax hand brakes. Royal Type K brake regulators were applied at both ends of each car.

The trucks are of the Symington-Gould spring-planless, double-truss type of 50-ton capacity with a 5-ft. 6-in. wheelbase. The side-frame and bolster castings are Grade B annealed steel. They are arranged for the application of five outer single A. A. R. coil springs and one Cardwell-Westinghouse friction spring. The chilled-iron wheels for all the cars were obtained from the American Car and Foundry Company, and the treads are ground. The journal bearings were furnished by the Magnus Metal Corporation and the journal-box lids from the Railway Steel Spring Company. The brake beams and brake-beam supports are divided between the Chicago Railway Equipment Company and the Buffalo Brake Beam Company. Creco bottom rod supports and Schaefer brake-beam hangers were applied to the cars.

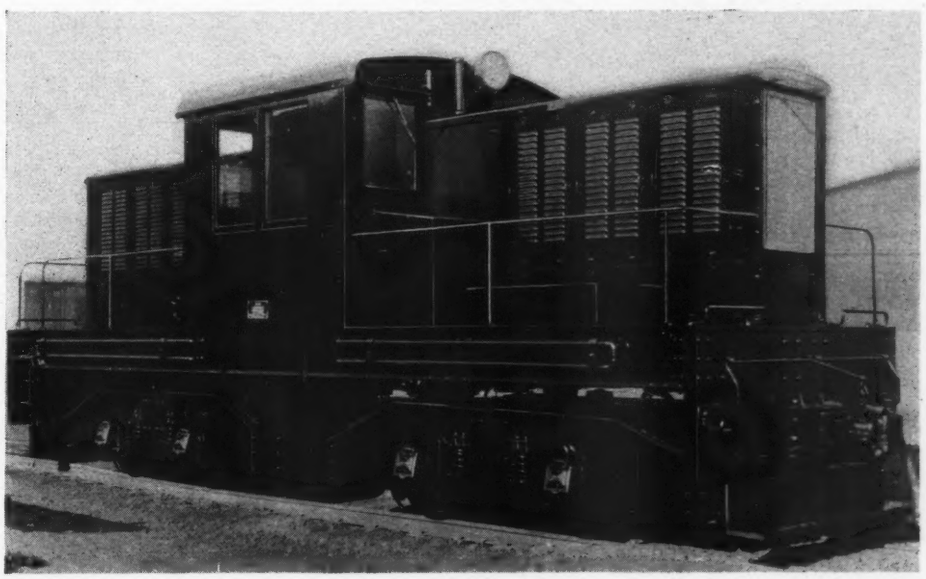
Atlas 65-Ton Diesel-Electric Switcher

ONE of the recent developments of The Atlas Car & Manufacturing Co., Cleveland, Ohio, is a 65-ton Diesel-electric locomotive having a starting tractive force of 39,000 lb. and available in track gages from a minimum of 36 in. to the standard gage. These locomotives have underframes of heavy rolled-steel sections and plate fabricated by a combination of riveting and welding. The power plant consists of two Diesel engines, either Cummins, Model HBIS-600 or, when specified, Hercules Model DFXD.

Principal Weights and Dimensions of the Atlas 65-Ton Diesel-Electric Locomotive

Weight in working order, lb.	130,000
Tractive force, starting, lb.	39,000
Tractive force, continuous, lb.	14,900
Speed at continuous tractive force, m.p.h.	6.1
Maximum safe speed, m.p.h.	30
Track gage, minimum 36-in. standard, in.	56½
Width, overall, ft.-in.	9-11
Height, overall, ft.-in.	13-0
Length, over coupler knuckles, ft.-in.	36-0
Truck wheelbase, ft.-in.	5-3
Truck centers, ft.-in.	16-0
Fuel tank capacity, gal.	250
Wheels, rolled steel, diameter, in.	33

The Cummins engines are supercharged, six-cylinder having 4⅞-in. bore by 6-in. stroke, each rated 200 hp.



Atlas 65-Ton Diesel-Electric Switching Locomotive Powered With Two 200-Hp. Engines

at 1,800 r. p. m. The Hercules engines are not supercharged and are six-cylinder, 5½-in. bore by 6-in. stroke, rated 193 hp. at 1,600-r. p. m.

The generators used with either engine are Westinghouse No. 193, shunt-wound, single-bearing, self-ventilated, continuously rated at 300 amp., 400 volts. The traction motors, four in number, are Westinghouse No. 1443-A, series-wound, self-ventilated type, continuously rated at 300 amp., 300 volts. The motors are mounted in Atlas cast-steel totally enclosed, double-reduction, spur-geared drives with anti-friction bearing throughout. The storage battery equipment consists of 16 cells, 235 amp.-hr. capacity, charged by automotive type generators on each engine.

The locomotives are equipped with single-station control so arranged that either power plant can be cut out and the locomotive operated on the other power plant. The brake equipment is Westinghouse No. 14 EL combined straight and automatic air brake. Air is provided by two water-cooled, 66 ft. capacity air compressors, one driven by each engine.

The four-wheel trucks under these locomotives are fabricated from rolled steel plates by riveting and welding.

Each truck is a complete unit with two driving motors, fully equalized brakes and sander equipment. Pullman type equalizers are used between springs and boxes.

New Books...

The Reorganization of Railroad Corporations, by William H. Moore. 173 pages. 9 in. by 6 in. Bound in cloth, $3; Bound in paper, $2.50. Published by the American Council on Public Affairs, 2153 Florida Avenue, Washington, D. C.

Just now the problems of railroad reorganization are in a shade cast by war traffic and inflated gross revenues. But they are just as perplexing as ever and will undoubtedly become front-page news again for the industry when the war is over. In spite of the times, Dr. Moore's study should win the readership its subject deserves.

In one sense, a reading of it will help the average railroad man clear up confusion in his mind on the subject. For the book strips the major cases now pending of legal wordiness and reviews them in concise units. Also the political background and aims of Section 77 are made as clear as their essentially complicated nature will allow. The chapters on "Reorganization Prior to 1933" and "Reorganization Personnel" are especially helpful in showing how committees, receivers or trustees and reorganization managers are appointed and operate.

In another sense, the book may re-confuse the average non-lawyer reader—because it goes so deeply, probes and questions so many procedures now accepted as truths, that it may generate confusion on points hitherto accepted as "settled." Perhaps this is the price that one must pay for worthwhile education. For future reference, this reviewer places on the record the fact that he warned you, despite its great merits—this book is *not* a "handy guide to the reorganization problem."

The book's depth stems principally from the author's tendency to discuss far more than his title indicates—such as true value; the nature of relative liens; the trick of "trading on the equity"; divisional mortgages, etc. In so doing, the book opens up a world of speculation, of dilemmas not before apparent; of conflicting interests which seem to make orderly or just settlement a "will-o'-the-wisp." Perhaps that is why Dr. Moore himself despairs of finding an adequate "composition" theory of reorganization and leans toward *absolute* priority—i. e. new capitalization should take in secured creditors 100 per cent in order of lien priority, the devil taking the hindmost. He sees in such a principle not only definiteness but a healthy means of introducing caution into future bonding of railroad properties.

So minded, the author must, perforce, oppose continued participation of old stockholders and management in reorganized companies. He writes on this subject: "The really serious consequences of the practice of allowing former equity holders to come through reorganization with any right of value chiseled from the property of the senior claimant lies not in the equity or inequity of the specific cases. Application of the doctrine of relative priority carries with it important social implications respecting the types of financial structures which are encouraged thereby. . . . If the railroad managements may secure the gains of large borrowing for their equity-holding constituency and at the same time feel confident that they will be left in control after default, the prospect of building financial structures that will not need periodic readjustment is not encouraging. Only by a strict application of the doctrine of absolute priority which would make the stockholders take the consequences of the financing methods employed can non-rigid financial structures be made more popular with those controlling railroad finances."

With many of the conclusions reached, your reviewer cannot agree. Also the subject of "value" of railroad property appears to merit less impatient discussion by the author. Further certain sections of the book suffer from unnecessary abstruseness—the discussion of economic rent, for example.

But the book as a whole is sound, all of it is honest and accurate and the author has performed a notable job of excavation, compounding and grading. His studies were carried on under a fellowship of the Brookings Institute and the publishing organization is a reliable, public-spirited body. The writing is clean and the classification of material, admirable.

A History of the Texas Railroads by S. G. Reed. 822 pages, 9 in. by 6 in. Bound in cloth. Published by the St. Clair Publishing Company, 3702 Mt. Vernon St., Houston, Tex. Price $3.50.

This is a well written and interesting book, which describes the transportation conditions in Texas under Spanish and Mexican rule, the early history of railroad development in that state and traces this development through the years to the present time. Throughout its pages, although it is primarily a history of transportation, a portion of an epic story of the development of a great state and a great nation is indirectly told.

The author, who retired as freight traffic manager of the Southern Pacific Lines in Texas and Louisiana on October 1, 1937, had accumulated a large collection of old records, books, newspapers and magazine articles for years prior to his retirement, and has spent several years since in compiling and organizing this and other available material and in writing this book. The result is a volume full of interesting and authentic detail, telling, for example, of the dangers and problems confronting the early settlers of Texas and the political and financial difficulties encountered by those promoting railroad construction during a period which included the Civil War and the panic of 1873.

Land grants, which played a large part in the development of Texas railroads, are discussed at length and facts and figures are given, in instances where they are available, that refute to a great extent the popular conception of the public regarding land-grant roads and the profits that were derived from land grants.

In spite of the mass of detail and information included in this book, it is unusually well organized and interestingly written. The first third of the book deals with general developments and early history as it concerned railroad financing, construction and development. Another third of the book deals separately with the development of individual roads, including the short independent lines as well as the major systems. The remainder of the book deals with general problems after the Civil War, including government regulation, the development of traffic and changes in traffic; rates; changes in railroad operation, financing and management; and modern traffic and transportation problems as they exist in the State of Texas.

NEWS

Carriers Set New Tank Car Record

Haul 640,478 barrels a day into east coast area in week ending May 2

The tank car movement of oil into the east coast area soared to a new all-time high with an average of 640,478 barrels a day for the week ending May 2, according to an announcement of Petroleum Coordinator Harold L. Ickes. This was an increase of 13.4 per cent over the preceding week, when the movement averaged 564,750 barrels a day. Oil shipments from California to Oregon and Washington increased slightly over the preceding week—from 29,314 barrels daily to 29,429 barrels.

In handling the week's movement into the east, the 21 oil companies participating loaded 19,926 cars. Including cars that were on the way back west for reloading, it is estimated that the east coast service was employing about 45,000 cars, taken largely from other sections of the country.

Meanwhile, Mr. Ickes has requested action that will make an estimated 5,000 additional tank cars immediately available for hauling petroleum and its products to the Atlantic seaboard and the Pacific Northwest states. Issued as a formal recommendation, the request calls for a reduction in the lay-over time of empty tank cars at refineries and terminals.

Under the speed-up plan, no more than one day's supply of empty tank cars will be held either at refineries or at water and pipe line terminals. Refineries may, however, hold two-days' supply of empty tank cars if these are to be used to haul aviation gasoline, aviation gasoline components, special napthas, toluol, and toluene, all of which are important to the war effort.

Deputy Coordinator Ralph K. Davies said that, although the actual number of cars in service in the curtailment areas may not increase, the speed-up of cars handled will have the effect of making an estimated 5,000 more tank cars available for service.

At the same time Mr. Ickes has announced an eight-point program which is designed to increase heavy fuel oil supplies in the east and to increase still further the "extraordinary" movement of oil by tank car. The program includes the formation of a joint tank car subcommittee for the east, middle-west, and gulf coast districts, "charged with the responsibility of obtaining maximum efficiency in the use of all tank cars employed by the petroleum industry, assuring that such tank cars are utilized to meet the critical problems of petroleum supply in each district," and the utilization of rail facilities for the movement of at least 100,000 barrels of oil daily up the Atlantic seaboard from the south.

Also, action was taken on Capital Hill this week looking toward the amelioration of the oil shortage in the east coast area. The Senate on May 6 adopted an amendment to the Independent Offices Appropriation bill which would authorize the Maritime Commission to spend not less than $20,000,000 from its construction fund for the construction of towboats and barges adapted for use in the transportation of oil, gasoline, fuels, and other commodities over the inland or coastal waters of the United States.

Later in the week the Senate committee on commerce favorably reported Senate Resolution 241, introduced by Senator Maybank, Democrat of South Carolina, which would authorize the investigation of whether or not the use of inland waterways for the transportation of petroleum products and other commodities may be increased.

President Signs War Department Civil Bill

President Roosevelt has signed H. R. 6736, the War Department Civil Functions Appropriation Bill, which carries appropriations for rivers and harbors work during the fiscal year ending June 30, 1943.

ODT Issues Master Plan for Local Transport Programs

The Office of Defense Transportation now has available copies of the manual published by its Division of Local Transport for the purpose of describing in detail methods for setting up systems of staggered hours and group riding in communities throughout the country. Copies of the manual have been sent to the governors of all the states and to mayors and other chief executives of all communities with a population of 10,000 or more.

Other copies, said an ODT announcement of May 8, "are available for distribution to interested groups and individuals throughout the country through such organizations as the United States Chamber of Commerce, the National Association of Manufacturers, and various labor organizations." The manual was prepared in connection with the recent call by Director Eastman of ODT for organization on a nationwide basis of emergency passenger transportation programs like those already operating in several communities.

Warns States On "Trade Barriers"

General Somervell raps truck limits and also those on train lengths

The federal-state conference on war restrictions and "trade barriers" heard Lieutenant General Brehon B. Somervell, chief of the War Department's Services of Supply, warn on May 7 that if the states do not voluntarily remove such restrictions on the war effort as now impede the transportation of war materials, the federal government will be forced to act on its own behalf. General Somervell was the concluding speaker at the three-day conference which was called by President Roosevelt to permit the federal and state officials to discuss the ways and means of relaxing and removing certain state laws and regulations which have the effect of slowing down the war effort.

"We have found," declared General Somervell, "numerous instances of unreasonably rigid enforcement of state trucking regulations that have delayed highway shipments of vital war materials. Truck drivers have even been sent to jail for technical violations and state and local officers have stubbornly refused to use common sense in the matter of loading laws. We find the same trouble in rail transportation. *If we're going to use our rails to the fullest extent to win this war, we're going to have to relax special limitations on train lengths and similar matters.*"

Also, at the concluding day's sessions the delegates were told by Secretary of Agriculture Wickard that "in transportation—by rail, truck, or ship—the situation is so tight that we cannot afford to move anything that is not absolutely essential."

"Neither can we afford any useless loading and unloading, round-about routing, or empty backhauls," continued Mr. Wickard. "In fact, there is so much to be moved that usually it is a case of which essential product has priority over other essential goods." (Inquiry at the Association of American Railroads revealed that the present situation regarding the car supply does not justify Mr. Wickard's statement. An A. A. R. spokesman said that the carriers were handling all freight being offered to them at the present time.)

Another speaker at the conference was William C. Crow, chief of the transportation and warehousing branch, Agricultural Marketing Administration, United States

(*Continued on page 964*)

Hearing on Public Aids to Transport

Study board will hear interested parties at session beginning June 29

Public hearings in connection with the investigation of public aids to transportation being made by the Board of Investigation and Research as directed by the Transportation Act of 1940 will open in Washington, D. C., on June 29. The hearings, which are expected to be concluded before July 4, will be held in the Departmental Auditorium on Constitution avenue between Twelfth and Fourteenth streets.

The purpose of the hearings, as stated in the Board's announcement of May 11, "is to afford interested parties an opportunity to present basic statistical data and to submit evidence bearing on the principles and methods which may be applied in determining the extent of public aids and in allocating the cost of such aids." Arguments on matters of policy which are not related to the measurement of public aid will not be heard at that time. It is planned to consider public aids to highway, railway, and water transportation in that order; while "an opportunity also will be given for presentations concerning related aspects of public aids to airway and pipeline transport."

Parties are being requested to submit their evidence in the form of exhibits where practicable. And persons intending to participate should notify the Board not later than May 25, giving an estimate of the time required for direct presentation. Cross-examination and rebuttal testimony will be permitted "within reasonable limits." Exhibits must be prepared and circulated among parties in advance, with six copies of each going to the Board not later than June 15. The Board also expects to present for examination by parties prior to the hearing exhibits summarizing data on public aids which have been assembled by its staff.

The May 11 announcement included a list of "some issues deemed important in the study of public aids." It was suggested that parties may submit evidence on some or all of the issues listed, but they are not limited to such questions. The list follows:

A. General
1. The reasons for including or excluding interest and tax equivalents in the determination of public aids to transportation.
2. The extent to which work relief expenditures for the construction and maintenance of transportation facilities should be charged to the general public as relief for unemployment rather than to transportation.
3. The extent to which obsolescence should be recognized in determining the public aids which should be charged to present users of transportation facilities.

B. Highway
1. The specific taxes, fees and other payments which may be regarded as offsets to public aids. The payments to be considered include the following:
   a. State and local gasoline taxes, and the related problem of "diversion."
   b. State and local registration fees.
   c. Property taxes on motor vehicles.
   d. Mileage and gross revenue taxes.
   e. Federal excises on gasoline and lubricating oils.
   f. Federal manufacturers' excise on motor vehicles.
2. The specific factors which should govern the allocation of highway costs, by classes of highways, between the community as a whole (general taxpayers) and motor vehicle operators.
3. The specific factors which should govern the allocation of the motor vehicle operators' share of highway costs among classes of vehicles. The characteristics of the highway, of the vehicle, and of the traffic must all be considered in formulating principles of cost allocation.

C. Railway
1. The amount of public aid extended to the railroads by means of land grants and other early developmental aids.
2. The extent to which the railroads have made compensation for Federal land grants in reduced rates on governmental traffic.
3. The amount of public aid extended to the railroads by the Reconstruction Finance Corporation and the Public Works Administration.
4. The amount and incidence of the public aid which may be involved in financing grade-crossing separations between railways and highways.
5. The amount and incidence of the public aid which may be involved in financing railway bridge alterations and relocations occasioned by waterway improvements.

D. Waterway
1. The extent of public aid to water transportation provided by public terminal facilities.
2. The specific methods by which the costs of multiple-purpose river development projects should be allocated between navigation and other functions.
3. The extent to which past expenditures on waterways and terminals which are no longer used and useful for navigation should be treated as obsolete and therefore disregarded in determining public aid to present users.
4. Criteria for the determination of amortization rates for capital expenditures on waterway and terminal facilities.

E. Airway
1. Methods by which the amount of public aid involved in mail payments to domestic air carriers may be determined.
2. The amount of public aid provided by Federal airways and public airports, and allocation of those costs between commercial carriers and other users.

F. Pipeline
1. The amount of public aid which may have been extended to pipeline transportation.

C. & E. I. Magazine to Cease Publication for Duration

Following the death on April 11 of L. S. Holman, who served for 19 years as editor of the C. & E. I. Flyer magazine, it has been decided to suspend publication, concluding with the April issue, for the duration of the war.

Representation of Employees

The National Mediation Board has certified election results wherein the United Construction Workers Organizing Committee, C. I. O., was "duly designated and authorized" to represent the maintenance of way employees of the Harbor Belt Line for purposes of the Railway Labor Act.

New Jersey Eases Tax Bills for Smaller Roads

Legislation modifying the formula for figuring the railroads' franchise tax bills in New Jersey will become effective following recent approval by Governor Edison of a bill supported by most of the roads. No change is made in the rate already in effect, but both a "floor" and a "ceiling" are established to narrow the range in which franchise charges will fluctuate, and it is provided that a blanket allowance of $200,000 may be deducted from the net income figures of each road before the tax is calculated. The smaller carriers, especially the Hudson & Manhattan, the New Jersey & New York, and the New York, Susquehanna & Western, will benefit considerably through application of the $200,000 deduction.

Sees Roads Doing "Phenomenal Job"

Reed reviews record which "deserves the gratitude of the people"

Railroads are today "doing the most phenomenal job in their history," declared Senator Clyde Reed, Republican of Kansas, in a May 11 Senate speech outlining "the record of the greatest transportation agency in the world, which should fill with pride the men who are making it, and which deserves the gratitude of the people of the United States." Senator Reed spoke on "Transportation Conditions Relating to Freight Service," and then proceeded to answer for his colleagues various specific questions about the wartime transport situation.

Insofar as the Senator knows, rail transportation is not now denied to anyone, but he thinks the carriers "must have more cars and engines to avoid a transportation crisis next fall." In other words, he fears that "we are pretty close to the saturation point of efficiency"; that "it will be very difficult to obtain additional service through increasing efficiency alone." Previously, the Senator had referred to the efforts of Director Eastman of the Office of Defense Transportation to obtain from the War Production Board increased materials allocations for railroad equipment. If the Eastman request be granted, Mr. Reed said, "that will be one thing; if it is not granted, that will be another." [The request was turned down by WPB, it has been learned.]

In preparing for his speech, the Senator had a luncheon conference on May 9 with Director Eastman and M. J. Gormley, executive assistant of the Association of American Railroads. In referring to that meeting he took occasion to say "a word of deserved praise" about those two men "who are most important in the efficient operation of the railroads at this time." The name of "Joe Eastman," he said, "is synonymous with faithful public service of the very highest quality"; while "Mike Gormley" also deserves "recognition and commendation for highly efficient service." Recalling that Mr. Gormley became chairman of the Car Service Division in 1922, Senator Reed went on to say that "there has been no serious car shortage since Mike Gormley brought order out of chaos and substituted system for guesswork."

The Senator's review of the efficiency record of the railroads was based on data prepared for him by the A. A. R. with assistance from the Interstate Commerce Commission and ODT. He told how the carriers in 1941 "performed more freight service than in any year in their history," pointing out that they did it with 25 per cent fewer cars than they had in 1926. To explain how this was done, he cited comparative 1926 and 1941 measures of efficiency. The average freight car load was up nine per cent; and car-miles per car day were up 29 per cent. "This increased efficiency," Senator Reed said, "more than off-

(*Continued on page 965*)

Travel Situation Is "Explosive"

Freight expansion likely to be orderly, but the demand for travel could zoom fast

Thus far the railroads have met every demand for service made upon them under wartime conditions, said John W. Barriger, III, federal manager of the Toledo, Peoria & Western and associate director of the Office of Defense Transportation, in an address delivered at the economic conference of the National Association of Mutual Savings Banks in New York on May 7. The speaker called attention to the peculiar character of railroad service—a highly perishable commodity that cannot be ordered far in advance or stored until wanted—and also stressed that their preparations to meet the national emergency have not been aided (as are other industries) by a Defense Plant Corporation set up to relieve them of financial liability for new facilities that may not be needed under post-war conditions. Despite these special difficulties, the ODT official told the bankers that, of all industries affected by wartime demands, the railroads alone have made a hit every time they have gone to bat.

The speaker gave plain warning that this record must soon be blemished if the railroads cannot obtain the equipment and materials necessary to meet the unprecedented demands that probably will be made for transportation. Even though there is every prospect of a large growth of freight traffic—accompanied by relocations of routes and facilities that will introduce real problems of the first magnitude—this growth is likely to proceed in such an orderly and reasonable manner that ingenuity and co-operative effort generally can cope with it successfully. But an unprecedented volume of passenger traffic may develop with "explosive suddenness." If it should, it will give rise to conditions that may affect vitally the entire future of the railway industry, because memories of personal inconveniences and hardships caused by inadequate passenger services will last, and be reflected in the post-war attitude of the public toward the railroads.

The great responsibilities of railroad managements under such circumstances are recognized in the ODT, Mr. Barriger asserted, and it is the duty of that office to help them bear this burden, to control traffic by diverting or regulating or, if necessary, suspending it when conditions get beyond bounds, but always to act in co-operation with the railroads to further the war effort. Emphasizing once more his conviction that government control of railroads is not in the picture during World War II, he declared that the function of the Office of Defense Transportation is to preserve the operating effectiveness of private management.

To provide transportation in the rapidly increasing quantities that the war effort will demand, private management needs an organization that understands its necessities, one that can "run interference" for it to sweep obstacles out of the way, and this is another purpose guiding ODT activities. One obstacle—one of the luxuries the country cannot afford now—is the kind of competitive rivalry that adversely affects maximum transportation capacity. Mr. Barriger did not take the attitude that all competition is wasteful, and he specifically pointed out that competition that expands capacity must remain unaffected, but he did assert his belief that some considerations of competitive advantage that properly loom large in a picture of peacetime service must be curbed in wartime to insure the utmost development of transportation capacity.

Equally important obstacles are those governmental regulations that restrain complete use of every bit of transportation capacity, and the speaker made it clear that such restrictions must be relaxed or modified whenever they impede full development of available capacity, no matter how much their operation may appear to be in the public interest under normal, peacetime conditions.

Western Roads End Shipping of Private Automobiles

The shipping of private automobiles by passengers on the extra ticket plan will be discontinued by Western railroads on June 1. Since these automobiles were shipped in freight cars, the practice was discontinued in order to make available every possible freight car to take care of the greatly increased demand for cars for war materials.

Eastman Names Consultant on "State Barriers"

Joseph E. Keller has been appointed by Director Eastman of the Office of Defense Transportation to be consultant on "state barriers." He will deal with "problems affecting the interstate movement of petroleum and other liquids needed in the war production drive."

Mr. Keller is a Washington, D. C., attorney who has specialized in petroleum and radio law.

Canada's Roads in the First Quarter

In the first quarter of the current year Canadian Pacific gross revenues were $57,644,844 (up $12,232,184 over last year). Operating expenses were $47,660,833 (up $10,768,579) and net operating income was $9,984,011 (up $1,463,605). For March alone, net revenues were $3,785,935 (an increase of $539,860)—being derived from gross at $20,746,457 (a rise of $4,126,481) and expenses at $16,960,522 (up $3,586,621).

The Canadian National had March operating revenues totaling $28,706,000 (an increase of $5,177,994); operating expenses being $22,282,394 (a rise of $3,686,442) and net operating revenue $6,423,606 (an increase of $1,491,552). For the quarter, gross was $79,623,000 (up $14,924,533), expenses were $64,397,841 (up $10,390,940), and operating net was $15,225,159 (a rise of $4,533,593).

How Co-Op Plan Works on C. N. R.

Union collaboration has brought many employee suggestions for improved service

The annual meeting in Montreal late in April of the System Joint Committee of the Maintenance of Way Section, operating under the "union-management co-operative plan," on the Canadian National, attracted more than ordinary attention this year because wide interest in this project has been aroused throughout the United States by proposals along similar lines recently sponsored by Donald Nelson, chairman of the War Production Board, for general adoption by America's war industry. To meet the demand for further information on this plan the June issue of the Canadian National Magazine will include a full account of the Montreal meeting.

An editorial in *Railway Age* of April 18, page 780, reviewed the background of this movement and outlined particularly the results obtained with it on the Baltimore & Ohio. In a letter published in *Railway Age* of May 9, page 907, Captain Otto Beyer—who was in charge of installing the plan on both the B. & O. and the Canadian National—explained how the plan works in the maintenance of way department of the C. N. R.

The scope of the work of the Joint Committees is clearly laid down by constitution, the C. N. R. report explains. "The committees are required to confine their recommendations to such subjects as apply to the advancement of the industry under the jurisdiction of the chairman or to the welfare of the employees under his jurisdiction and to the betterment of the railway's service to the public. It is explicitly specified that no subject which would affect wage agreements is to be considered by the committees, nor do the committees deal with grievances which arise about working conditions established by agreements between the unions and the management, as other means are provided to take care of instances of this nature."

In 1941 the average number of C. N. R. maintenance of way employees was 22,200. During the year 114 meetings were held under the co-operative plan—one system-wide, three regional, and 110 divisional. Sixteen hundred and seventy-eight proposals were submitted to these meetings, of which 968 were adopted, 391 dropped, 25 deferred, and 294 remained pending at the time of the annual meeting. Since the inception of the movement 18,908 subjects have been introduced, 14,267 by union representatives and 4,641 by the management. Of the grand total submitted 12,733, or 67.3 per cent, have been adopted. In cases where subjects are dropped the sponsor is always told why.

Suggestions presented included such matters as improving tools, care and distribution of material, better housing, improvement and care of track cars, methods of work, accident prevention, rules, getting additional traffic, training employees,

greater regularity of employment, and betterments to appliances and equipment.

A digest of the experience of the Canadian National in applying the co-operative plan in the mechanical department completes the picture of its effect on that railroad. The first meeting was held in January, 1925, and by April, 1927, the movement had been extended to cover the whole system. A total of 27,105 suggestions have been considered by the mechanical department co-operative committees since their inception. This represents over six suggestions per working day, and over 83 per cent of these have been accepted. Suggestions offered have embraced a wide range of subjects, including securing additional traffic, operation of the co-operative plan, apprentice instruction, safety and first aid, fire prevention, standardizing forces and measurement of output, developing new devices, condition of shops and grounds, defective materials, repairs to machinery, care of tools, purchase of new equipment, storage and handling of materials, reclaiming material, standardizing shop practices, alterations to standard designs for locomotive and cars, many economies in methods and materials.

A. J. Krueger Resumes Direction of the C. D. O. A.

During the absence on military service of F. E. Cheshire, president of the Car Department Officers' Association, the duties of the president's office will be assumed by A. J. Krueger, superintendent car department, New York, Chicago & St. Louis, who is a past president of the association and at present chairman of the General Committee. This action is in accordance with provisions of the constitution and will be effective until the return of Mr. Cheshire or until an annual meeting is held. As reported in the *Railway Age* of May 9, Mr. Cheshire has been appointed superintendent car department, Military Railway Service, and holds the commission of Major, U. S. A.

Grandfather Rights of Water Carriers

Water lines which have been offering services to points where their barges are towed by another company under arrangements which give them no authority to direct or control the performance of the towing operations are not entitled to "grandfather-clause" certificates covering operations to points thus served, according to the decision of the Interstate Commerce Commission, Division 4, in the W-104 proceeding involving applications of the Union Barge Line Corporation of Pittsburgh, Pa. Following the recommendations of Examiner Stiles' proposed report which was reviewed in the *Railway Age* of January 10, page 184, the commission found that in such a set-up the transportation involved is that of the towing company, performed by it as a connecting common carrier.

Union sought "grandfather" rights under Part III of the Interstate Commerce Act, covering common-carrier operations generally on the Mississippi south of Cairo, Ill., the Ohio, the Monongahela, the Allegheny, and tributaries of the foregoing; also, on the Gulf intracoastal waterway. The commission found the applicant entitled to a certificate covering operations "as a common carrier by water of commodities generally between all points on the Allegheny, Monongahela, Ohio, Kanawha, and Wolf rivers, and the Mississippi river south of Cairo, Ill." Other Union applications covered contract-carrier operations in the towage of floating objects; but the commission found that such operations are exempt from regulation under its October 29, 1941, order in Ex Parte No. 147.

The barge-towing issue was disposed of in the commission's discussion of Union's claims to rights on the Gulf intracoastal waterway where, with one exception, its barges have always been towed by the Coyle Lines, an affiliate of the DeBardeleben Coal Corporation. In contending for a certificate covering such operations Union, among other arguments, relied on section 303(f)(2) of Part III of the Interstate Commerce Act which stipulates that the provisions of that part shall not apply "to transporation by water by any person . . . for a . . . water carrier subject to this part, in the performance within terminal areas of transfer, collection, or delivery services, or in the performance of floatage, car ferry, lighterage, or towage; but such transportation shall be considered to be performed by such carrier . . . as part of, and shall be regulated in the same manner as, the transportation by . . . water to which such services are incidental."

The commission conceded that the towage there contemplated is not limited to such as is performed within terminal areas; but it went on to insist that not every towage is thereby exempt, "but only such as is performed under contract or agency for another common carrier subject to the act; and in the case of water carriers, the carrier for whom the exempt towage is performed must have a right to operate on the waterway where that towage is performed." As the commission viewed the present case, the facts "disclose that, except for the cargo insurance feature, which is a common feature of joint-line transportation by water, Union performed only the services which are customarily performed by the initial rail carriers parties to joint rates and/or through routes."

Because Union's barges were towed under similar circumstances to serve points on the Red-Black-Ouachita and Tennessee rivers and on the Mississippi above Cairo, the commission also denied the application for "grandfather" rights covering such operations.

Car Savings Came Promptly Under Order No. 1, Eastman Says

Director Eastman of the Office of Defense Transportation "disclosed a savings of 31 per cent in closed freight cars loaded with less-than-carload merchandise two days after ODT's General Order No. 1 became effective," said a May 9 press release from ODT. The order, setting a six-ton weight minimum on merchandise loading and prohibiting use of closed cars in intra-terminal movement, became effective May 1.

Carloadings for the week ended May 9, the ODT release pointed out, totaled 858,904 for all classes of freight, as compared with 794,299 for the same week in 1941, an increase of 64,605 cars. L. c. l., however, "required only 112,736 cars for this period as compared with 163,691 loaded a year ago, a decrease of 50,955 cars which were made available for transportation of urgent war materials."

Service Order No. 73 Issued May 11; Revoked May 14

The Interstate Commerce Commission on May 14 issued service order No. 73-A vacating as of that date service order No. 73, which had been issued May 11 to relieve an "accumulation and threatened congestion of freight cars" by authorizing and directing railroads to forward by the most available routes loaded or empty cars routed via roads operating in Louisiana, Mississippi, and Alabama.

Wood Becomes Full-Time Eastman Assistant on Lake Carriers

Director Eastman of Office of Defense Transportation has appointed A. T. Wood, of Cleveland, Ohio, former vice-president of the Wilson Transit Company, as full-time Assistant on Great Lakes Carriers. Mr. Wood, who has been serving part-time in this capacity since last January, will have offices in the Terminal Tower, Cleveland. Since 1934, Mr. Wood has been president of the Lakes Carriers' Association, from which post he has been granted a leave of absence.

Effective Date of ODT's Tank-Car Order Postponed to June 1

The effective date of the Office of Defense Transportation's General Order No. 7, which will place tank car movements on a general or special permit basis, has been postponed from May 15 to June 1. The delay, said an ODT announcement of May 9, "was authorized by Mr. Eastman to give shippers more time to file applications for permission to move cars affected by the order."

Provisions of the order were set forth in last week's issue, page 910.

Charges for Refrigeration Service

Examiner F. L. Sharp, in a proposed report on further hearing in the No. 20679 proceeding, has recommended an Interstate Commerce Commission finding to the effect that collection by the railroads of the separately-published refrigeration-service charges required by the commission in its prior report of October 1, 1940, will not be the proximate cause of diversion of traffic to motor carriers. The further hearing came as a result of the commission's action reopening the competitive phase of the case in response to a petition filed by some of the respondent railroads.

Examiner Sharp recognized that the trucks have taken much perishable traffic from the railroads; but he found evidence to indicate that differences in cost have

not been controlling factors. He does not think the present advantages of truck transportation would be greatly augmented by the assessment on rail shippers of the charges here involved. Moreover, Mr. Sharp thinks the commission might go outside the record and take judicial notice of the wartime traffic and what he conceives to be the railroads' needs for such relief as the trucks can afford. Finally, he points out that refrigeration-service charges were not increased in Ex Parte 148; although he sees no reason why such service "should not bear its proportional share of the increase in the cost of railroad labor."

Special Deliveries and "Call Backs" Get 15-Day Reprieve

Director Eastman of the Office of Defense Transportation has postponed from May 15 to June 1 the effective date of those provisions of General Order No. 6 which will prohibit local-delivery trucks from making special deliveries, "call backs" or more than one daily delivery to any person. Provisions of the order which will require local truckers to reduce their total mileage by 25 per cent each month as compared with the corresponding month of 1941 already had a June 1 effective date.

The postponement, said the ODT announcement, was for the purpose of giving industries affected more time in which to revise their delivery schedules and work out plans for conservation of tires and equipment.

Barriger Addresses Traffic Executives

At a dinner for traffic executives of large industries and railways at Chicago on May 13, John W. Barriger, federal manager of the Toledo, Peoria & Western Railway, spoke in detail on the objectives of federal operation of that property and reiterated the statement previously made that the action of the government through the Office of Defense Transportation in taking over the operation of this railway is in no wise to be construed as a precedent for similar action by other properties but that this road will be returned to its owners at the first opportunity. He stated also that all net earnings are being re-invested in improvements in the property and that every effort is being made to increase the trainload and in other ways operate it efficiently.

Jersey Seashore Excursions Off for the Duration

One-day excursions between Philadelphia and Atlantic City and other resorts in southern New Jersey have been discontinued "for the duration" by the Pennsylvania-Reading Seashore Lines, it was announced by J. O. Hackenberg, general manager. Ordinarily the one-day excursions are operated on Sundays and holidays through the spring until about the first of May, when daily operation is inaugurated. This year, the last one-day seashore excursion was run on Sunday, May 3.

"We will have available on Sundays and holidays," the announcement continues, "less than half as many cars this year as we had last year for seashore travel. While a few more cars will be available during the week, it is obvious that we cannot take care of the one-day excursionists, moving as they do in such heavy volume, much as we would like to do so."

Case Involving N. Y. C.-Nicholson Relationship Reopened

The Interstate Commerce Commission has reopened the No. 28162 proceeding wherein its report of October 6, 1941, called upon the New York Central to divest itself voluntarily of that interest in the Nicholson Universal Steamship Company, a Great Lakes operator, which the commission found to be in violation of the so-called Panama-Canal-Act provisions of the Interstate Commerce Act. The reopening on the commission's own motion is "solely on the question of whether the finding in the report 'that there is actual competition for traffic between the New York Central and Nicholson Universal' should be modified."

Meanwhile, the commission denied the N. Y. C. petition for a modification of the report; but it postponed the effective date of the report "until further order of the commission." The report was reviewed in the *Railway Age* of November 8, 1941, page 753.

I. C. C. Income and Balance Sheet Items for February

The Interstate Commerce Commission on May 8 made public its Bureau of Statistics' latest monthly compilation of selected income and balance sheet items, showing February's net income of the Class I railroads to have been $23,715,624, and that for the year's first two months' at $49,843,853.

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled From 132 Reports (Form IBS) Representing 136 Steam Railways

(Switching and Terminal Companies Not Included)

Income Items	All Class I Railways: For the month of February 1942	For the month of February 1941	For the two months of 1942	For the two months of 1941
1. Net railway operating income	$66,486,019	$58,135,964	$135,450,258	$120,156,261
2. Other income	10,955,380	10,614,688	23,507,992	23,014,221
3. Total income	77,441,399	68,750,652	158,958,250	143,170,482
4. Miscellaneous deductions from income	2,373,746	2,231,828	4,861,151	4,664,604
5. Income available for fixed charges	75,067,653	66,518,824	154,097,099	138,505,878
6. Fixed charges:				
6-01. Rent for leased roads and equipment	12,234,401	12,041,809	25,818,799	24,308,316
6-02. Interest deductions[1]	36,958,221	38,142,379	74,077,317	76,785,696
6-03. Other deductions	117,195	117,706	234,369	238,383
6-04. Total fixed charges	49,309,817	50,301,894	100,130,485	101,332,395
7. Income after fixed charges	25,757,836	16,216,930	53,966,614	37,173,483
8. Contingent charges	2,042,212	1,531,767	4,122,761	3,056,694
9. Net income	23,715,624	14,685,163	49,843,853	34,116,789
10. Depreciation (Way and structures and Equipment)	18,837,533	17,662,462	36,590,188	35,343,427
11. Amortization of Defense Projects	4,041,608	.....	7,903,306	.....
12. Federal income taxes	24,178,119	6,964,813	41,759,165	14,153,551
13. Dividend appropriations:				
13-01. On common stock	12,738,588	14,985,496	15,098,588	19,848,145
13-02. On preferred stock	2,583,473	2,583,411	5,069,870	3,119,847
Ratio of income to fixed charges (Item 5 ÷ 6-04)	1.52	1.32	1.54	1.37

Selected Asset and Liability Items	All Class I Railways: Balance at end of February 1942	Balance at end of February 1941
20. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$466,729,588	$560,181,476
21. Cash	$746,705,113	$674,589,645
22. Temporary cash investments	136,101,795	71,888,388
23. Special deposits	181,794,431	156,274,100
24. Loans and bills receivable	1,220,565	1,532,399
25. Traffic and car-service balances—Dr.	29,601,328	28,956,904
26. Net balance receivable from agents and conductors	86,655,150	56,620,166
27. Miscellaneous accounts receivable	234,485,006	135,287,643
28. Materials and supplies	499,808,867	356,648,514
29. Interest and dividends receivable	17,723,327	15,834,004
30. Rents receivable	1,132,869	1,162,326
31. Other current assets	24,780,496	5,522,191
32. Total current assets (items 21 to 31)	1,960,008,947	1,504,316,280
40. Funded debt maturing within 6 months[2]	$101,994,179	$137,659,296
41. Loans and bills payable[3]	57,853,165	81,455,554
42. Traffic and car-service balances—Cr.	62,288,307	47,315,220
43. Audited accounts and wages payable	328,296,528	257,196,977
44. Miscellaneous accounts payable	55,132,675	52,229,179
45. Interest matured unpaid	56,809,751	38,716,871
46. Dividends matured unpaid	4,879,905	1,541,672
47. Unmatured interest accrued	88,506,612	86,972,521
48. Unmatured dividends declared	17,777,638	16,468,346
49. Unmatured rents accrued	22,572,658	23,605,127
50. Accrued tax liability	371,139,068	212,386,556
51. Other current liabilities	55,112,644	50,656,872
52. Total current liabilities (items 41 to 51)	1,120,368,951	868,544,895
53. Analysis of accrued tax liability:		
53-01. U. S. Government taxes	255,153,046	105,496,365
53-02. Other than U. S. Government taxes	115,986,022	106,890,191

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.
[3] Includes obligations which mature not more than 2 years after date of issue.

NET INCOME OF LARGE STEAM RAILWAYS

(Switching and Terminal Companies Not Included)

Name of railway	Net Income After Depreciation and Amortization of Defense Projects — For the two months of February		Net Income Before Depreciation and Amortization of Defense Projects — For the two months of February	
	1942	1941	1942	1941
Alton	$281,930	* $165,635	$329,048	* $120,494
Atchison, Topeka & Santa Fe System[3]	5,121,208	1,790,306	7,517,652	3,796,553
Atlantic Coast Line	2,797,808	2,396,264	3,464,241	2,784,569
Baltimore & Ohio	968,408	1,442,390	2,752,623	2,687,531
Boston & Maine	278,233	663,731	561,723	900,694
Central of Georgia[2]	* 102,446	* 144,877	49,281	* 2,101
Central of New Jersey[2]	* 239,024	* 447,112	* 7,218	* 226,879
Chesapeake & Ohio	2,866,715	4,387,823	4,439,959	5,815,026
Chicago & Eastern Illinois	277,345	236,701	381,062	339,690
Chicago & North Western[2]	* 1,223,362	* 1,390,437	* 289,204	* 583,442
Chicago, Burlington & Quincy	2,917,340	1,723,569	3,974,258	2,638,036
Chicago Great Western	180,065	62,482	274,442	156,128
Chicago, Milwaukee, St. Paul & Pacific[2]	1,494,575	* 367,516	2,533,061	643,344
Chicago, Rock Island & Pacific[2]	1,264,709	* 346,731	2,017,660	380,282
Chicago, St. Paul, Minneapolis & Omaha	* 281,201	* 414,759	* 181,284	* 323,266
Delaware & Hudson	527,219	302,920	845,159	494,114
Delaware, Lackawanna & Western	22,784	416,382	440,079	828,804
Denver & Rio Grande Western[2]	166,609	* 801,739	407,534	* 585,613
Duluth, Missabe & Iron Range	* 1,544,071	* 1,724,403	* 1,296,093	* 1,578,404
Elgin, Joliet & Eastern	375,284	1,045,332	832,495	1,249,374
Erie	1,401,515	824,485	2,504,513	1,434,682
Grand Trunk Western	* 348,095	196,142	* 136,990	391,628
Great Northern	* 121,863	* 2,152,987	1,262,741	* 1,442,457
Gulf, Mobile & Ohio	228,135	205,195	380,511	346,914
Illinois Central	1,245,269	1,671,875	2,588,876	2,787,467
Lehigh Valley	* 414,015	412,686	31,698	747,910
Long Island	* 401,511	* 373,405	* 103,425	* 113,549
Louisville & Nashville	1,942,197	2,344,009	3,141,872	3,090,170
Minneapolis, St. Paul & Sault Ste. Marie[2]	* 971,985	* 1,227,612	* 638,642	* 1,014,485
Missouri-Kansas-Texas	211,141	* 431,675	402,275	* 239,280
Missouri Pacific[2]	1,036,592	* 362,307	1,823,123	388,692
New York Central[4]	1,434,376	3,424,546	5,211,285	6,446,406
New York, Chicago & St. Louis	1,450,967	1,115,284	1,783,486	1,390,870
New York, New Haven & Hartford[2]	660,504	99,319	1,361,898	654,551
Norfolk & Western	3,440,988	5,315,425	4,729,290	6,418,503
Northern Pacific	294,151	* 1,054,962	1,407,250	* 486,224
Pennsylvania	2,537,539	4,627,201	7,472,724	9,193,123
Pere Marquette	190,928	672,936	698,630	1,050,313
Pittsburgh & Lake Erie	499,421	788,668	1,034,159	1,177,698
Reading	891,384	1,334,438	1,689,936	1,840,392
St. Louis-San Francisco[2]	17,126	* 541,085	521,652	* 38,605
St. Louis, San Francisco & Texas	14,494	* 25,641	14,494	* 25,641
St. Louis Southwestern[2]	538,254	431,008	655,202	539,404
Seaboard Air Line[1]	672,280	225,916	1,094,113	630,259
Southern	2,053,026	1,870,499	3,477,163	2,467,705
Southern Pacific[5]	7,109,245	2,255,173	8,505,134	3,591,386
Texas & Pacific	547,775	385,499	764,668	596,497
Union Pacific (including leased lines)	3,885,380	468,967	5,492,247	1,811,113
Wabash	600,657	122,353	1,089,178	484,123
Yazoo & Mississippi Valley	1,137,577	* 242,578	1,225,917	* 154,265

* Deficit.
[1] Report of receiver or receivers.
[2] Report of trustee or trustees.
[3] Includes Atchison, Topeka & Santa Fe, Gulf, Colorado & Santa Fe, and Panhandle & Santa Fe.
[4] Includes Boston & Albany, lessor to New York Central.
[5] Includes Southern Pacific Company, Texas & New Orleans, and leased lines. The report contains the following information: "Figures reported for Southern Pacific Transportation System exclude offsetting debits and credits for interest on funded securities and rentals for leased properties between companies included therein. Operations for 1942 of separately operated Solely Controlled Affiliated Companies (excluding results for Southern Pacific Railroad Company of Mexico), not included in income results for the System, resulted in a net loss of $207,356 for the month and $329,048 for the period. These results include $195,577 for the month and $391,154 for the period, representing interest on bonds of such companies owned by Southern Pacific Company not taken into income by S. P. Co. and, therefore, not included in the 1942 income results for the System. The combined results for 1942 for Southern Pacific Transportation System and separately operated Solely Controlled Affiliated Companies (excluding S. P. R. R. Co. of Mexico) amounted to a net income of $3,344,377 for the month and $7,171,351 for the period. Figures herein given exclude results of S. P. R. R. Co. of Mexico for the reason that policy was adopted January 1, 1940 of making no further advances to that company, it being required to conduct its operations entirely within its own resources."

Later figures for March and the year's first three months, as reported by the Association of American Railroads, were published in the *Railway Age* of May 9, page 913.

The commission's statement shows that the roads not in receivership or trusteeship had a February net of $21,115,180 as compared with $17,881,192 in the same month last year; while their net income for the year's first two months was $46,119,750 as compared with $40,448,144 for the same period in 1941.

Ninety-five roads reported net incomes for February, while 34 reported net deficits; in February, 1941, there were 77 net incomes and 52 net deficits. For the year's first two months 92 roads reported net incomes and 37 reported net deficits, as compared, respectively, with 80 net incomes and 49 net deficits in the same period in 1941. The consolidated statement for all Class I roads and that showing incomes or deficits of "large steam railways" are given in the accompanying tables.

1941 Freight Commodity Statistics

Tons of revenue freight originated by Class I railroads in 1941 showed an increase of 21.6 per cent over 1940, according to the freight commodity statistics issued by the Interstate Commerce Commission's Bureau of Satistics. Last year's total was 1,227,675,897 tons as compared with 1,009,420,663 tons in 1939.

The 1941 totals by commodity groups and the percentage increases over 1940 are as follows: Products of agriculture, 100,172,666 tons, 12.8 per cent; animals and products, 16,810,149 tons, 8.8 per cent; products of mines, 684,433,639 tons, 20 per cent; products of forests, 71,536,304 tons, 22.9 per cent; manufactures and miscellaneous, 336,632,134 tons, 28.5 per cent; all l. c. l. freight, 18,091,005 tons, 23.1 per cent.

The statement also sets forth freight revenue by commodities; and there again all groups showed increases over 1940, the range being from the 8.5 per cent rise in the revenue from animals and products to 36 per cent for manufactures and miscellaneous. The total 1941 freight revenues are shown in the statement as $4,624,819,565, up 25.7 per cent from 1940's $3,678,097,359.

Freight Car Loading

Loading of revenue freight for the week ended May 9 totaled 839,253 cars the Association of American Railroads announced on May 14. This was a decrease of 19,651 cars, or 2.3 per cent, below the preceding week, but an increase of 2,104 cars, or 0.3 of one per cent, above the corresponding week in 1941, and an increase of 158,625 cars, or 23.3 per cent, above the same week in 1940.

As reported in last week's issue, loadings of revenue freight for the week ended May 2 totaled 858,904 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, May 2

District	1942	1941	1940
Eastern	169,855	177,757	144,096
Allegheny	191,052	177,479	136,153
Pocahontas	57,423	35,284	48,908
Southern	129,808	111,089	99,596
Northwestern	132,840	135,058	96,061
Central Western	113,251	109,247	96,836
Southwestern	64,675	48,385	43,897
Total Western Districts	310,766	292,690	236,794
Total All Roads	858,904	794,299	665,547
Commodities			
Grain and grain products	36,193	33,854	33,173
Live stock	13,885	12,835	13,071
Coal	169,419	92,786	122,544
Coke	14,056	10,273	7,685
Forest products	50,407	42,674	31,215
Ore	78,997	79,271	35,478
Merchandise l.c.l.	112,736	163,691	149,902
Miscellaneous	383,211	358,915	272,479
May 2	858,904	794,299	665,547
April 25	861,353	721,627	644,804
April 18	846,562	708,793	628,468
April 11	814,233	679,808	619,105
April 4	828,890	683,402	602,835
Cumulative Total, 18 Weeks	14,362,427	12,974,914	11,331,289

In Canada.—Carloadings for the week ended May 2 totaled 66,126, as compared with 63,802 in the previous week and 61,263 in the corresponding week last year, according to the tabulation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
May 2, 1942	66,126	32,935
Apr. 25, 1942	63,802	32,723
Apr. 18, 1942	63,838	33,426
May 3, 1941	61,263	29,734
Cumulative Totals for Canada:		
May 2, 1942	1,111,423	575,440
May 3, 1941	992,330	517,152
May 4, 1940	857,554	439,904

April Employment 14.62 Per Cent Above Last Year

Railroad employment increased another 4.18 per cent—from 1,190,416 to 1,240,171—during the one-month period from mid-March to mid-April, while the April total was 14.62 per cent above April, 1941, ac-

(News continued on page 962)

NEW YORK CENTRAL RAILROAD COMPANY

Annual Report

To the Stockholders of
THE NEW YORK CENTRAL RAILROAD COMPANY

The business of the Company during 1941 continued to be influenced largely by the expanding program of National Defense. Total operating revenues were $447,789,655, exceeding those of 1940 by $77,243,780—or 20.85 per cent.

Throughout the year it was again demonstrated that, despite the development of other facilities, the railroads remain the country's chief agency of transportation.

Additional and improved facilities and equipment have made it possible for the Company to handle efficiently the largely increased traffic occasioned by the war economy.

Operating Results

The transportation of revenue freight increased 25,316,777 tons —18.54 per cent—to a total of 161,865,972 tons.

Measured in ton mile units (one ton carried one mile), all freight transported, both revenue and non-revenue, was greater by 23.97 per cent, with an increase of only 15.43 per cent in freight train miles.

Automobile traffic amounted to 2,967,145 tons, a gain of 460,100 tons, or 18.35 per cent, over 1940, with gross revenue of $19,763,114, an increase of $2,433,749—14.04 per cent. Except for the curtailment of passenger automobile production during the latter part of 1941, the increase would probably have been greater.

Iron and steel traffic totaled 10,251,149 tons, which was above the 1940 figure by 2,844,411 tons—38.40 per cent, and gross revenue was $34,161,927, an increase of $9,817,308—40.33 per cent.

Less-than-carload freight handled totaled 2,402,679 tons, and exceeded 1940 by 686,599 tons, or 40.01 per cent, with revenue of $24,228,464, an increase of $7,100,507, or 41.46 per cent.

By classes, compared with 1940, the tonnage and the revenues before deduction for absorbed switching, overcharges, etc., of all commodities, were:

	Tons handled	Increase	Revenue	Increase
Products of agriculture	9,880,552	1,598,162	$23,476,681	$4,311,109
Animals and products	2,520,232	144,953	18,560,381	866,290
Products of mines	92,704,434	10,108,917	103,750,675	12,731,533
Products of forests	4,186,671	1,248,829	9,942,631	3,064,700
Manufacturers and miscellaneous	50,171,404	11,529,317	172,533,164	42,461,860
All less than carload traffic	2,402,679	686,599	24,228,464	7,100,507
TOTAL	161,865,972	25,316,777	$352,491,996	$70,535,999

The total number of passengers carried was 49,324,576, an increase of 1,792,854, or 3.77 per cent. Interline and local passengers were above the previous year's figure by 890,019—33.46 per cent, and 1,876,186—11.45 per cent, respectively. Commutation passengers decreased compared with 1940, by 973,351, or 3.42 per cent. Passengers carried one mile totaled 3,508,301,326, exceeding the 1940 figure by 461,006,671, or 15.13 per cent.

The increased passenger traffic was largely due to the expanded industrial activity and movement of military personnel.

An outstanding improvement in our passenger service was the inauguration of the stainless steel streamlined Empire State Express on December 7, 1941, operating between New York, Buffalo, Cleveland, and Detroit. In addition, 66 new streamlined coaches were placed in service on the principal through trains.

Income Account

	Year Ended Dec. 31, 1941	Year Ended Dec. 31, 1940	Increase or Decrease
OPERATING INCOME	10,917.76 *miles operated*	10,940.89 *miles operated*	23.13 *miles*
RAILWAY OPERATIONS			
Railway operating revenues	$447,789,655.19	$370,545,874.82	+$77,243,780.37
Railway operating expenses	331,438,111.25	278,674,979.67	+52,763,131.58
NET REVENUE FROM RAILWAY OPERATIONS	$116,351,543.94	$91,870,895.15	+$24,480,648.79
Percentage of expenses to revenues (Operating Ratio)	(74.02)	(75.21)	(–1.19)
Railway tax accruals	$43,411,828.76	$33,476,018.75	+$9,935,810.01
RAILWAY OPERATING INCOME	$72,939,715.18	$58,394,876.40	+$14,544,838.78
Equipment rents, net debit	$12,767,648.10	$11,636,287.87	+$1,131,360.23
Joint facility rents, net debit	2,753,307.03	2,706,151.50	+47,155.53
NET RAILWAY OPERATING INCOME	$57,418,760.05	$44,052,437.03	+$13,366,323.02
OTHER INCOME			
Revenues from miscellaneous operations	$569,571.20	$596,740.75	–$27,169.55
Income from lease of road and equipment	301,756.80	263,003.45	+$38,753.35
Miscellaneous rent income	3,246,713.80	3,721,045.02	–474,331.22
Miscellaneous non-operating physical property	1,299,468.27	1,877,441.03	–577,972.76
Separately operated properties—profit	1,734,936.33	856,730.16	+878,206.17
Dividend income	7,513,672.26	6,579,040.16	+934,632.10
Income from funded securities	4,229,667.71	4,032,286.96	+197,380.75
Income from unfunded securities and accounts	38,317.02	128,112.36	–89,795.34
Income from sinking and other reserve funds	62,896.84	69,686.27	–6,789.43
Miscellaneous income	86,787.63	59,029.82	+27,757.81
TOTAL OTHER INCOME	$19,083,787.86	$18,183,115.98	+$900,671.88
TOTAL INCOME	$76,502,547.91	$62,235,553.01	+$14,266,994.90
MISCELLANEOUS DEDUCTIONS FROM INCOME			
Expenses of miscellaneous operations	$364,678.53	$443,882.67	–$79,204.14
Taxes on miscellaneous operating property	107,435.21	76,963.84	+$30,471.37
Miscellaneous rents	274,407.83	484,471.99	–210,064.16
Miscellaneous tax accruals	503,897.65	509,854.19	–5,956.54
Separately operated properties—loss	4,312.51	22,775.67	–18,463.16
Miscellaneous income charges	196,481.84	449,666.32	–253,184.48
TOTAL MISCELLANEOUS DEDUCTIONS	$1,451,213.57	$1,987,614.68	–$536,401.11
INCOME AVAILABLE FOR FIXED CHARGES	$75,051,334.34	$60,247,938.33	+$14,803,396.01
FIXED CHARGES			
Rent for leased roads and equipment	$22,077,464.04	$21,724,402.41	+$353,061.63
Interest on funded debt	25,409,166.70	25,283,481.58	+125,685.12
Interest on unfunded debt	1,319,141.80	1,974,970.16	–$655,828.36
TOTAL FIXED CHARGES	$48,805,772.54	$48,982,854.15	–$177,081.61
NET INCOME	$26,245,561.80	$11,265,084.18	+$14,980,477.62
Equipment depreciation charges included in expenses	$18,240,005.29	$15,989,969.39	+$2,250,035.90
Road property and power plant machinery depreciation	4,761,044.00	.....	+4,761,044.00
Amortization of equipment	631,470.49	.....	+631,470.49
Included in other income and rent for leased roads and equipment are certain inter-company transactions representing credits and corresponding debits amounting to	$4,160,093.38	$4,331,859.09	–$171,765.71
Also included in other income are items representing interest and dividends amounting to	1,503,642.99	1,443,271.94	+$60,371.05

received on securities of and advances to terminal and other railroad companies whose properties are jointly used by this company, as to the major portion of which a like amount was paid by the company to those companies as rental and included in joint facility rents.

Profit and Loss Account

BALANCE TO CREDIT OF PROFIT AND LOSS, DECEMBER 31, 1940		$178,079,442.84
ADDITIONS:		
Net income for the year 1941	$26,245,561.80	
Credits from retired road property	155,441.26	
Delayed income credits	4,127,980.41	
Donations	14,407.29	
Miscellaneous credits	796,580.64	31,339,971.40
		$209,419,414.24
DEDUCTIONS:		
Surplus appropriated for investment in physical property	$53,193.18	
Debt discount extinguished through surplus	17,342.44	
Debits from retired road property (represents ledger value, less salvage recovered, of roadway property not required for transportation service retired during the year)	3,185,105.75	
Miscellaneous debits	31,695,351.76	34,950,993.13
BALANCE TO CREDIT OF PROFIT AND LOSS, DECEMBER 31, 1941		$174,468,421.11

For the Board of Directors,
F. E. WILLIAMSON, *President.*

[Advertisement]

News

(*Continued from page 960*)

cording to the Interstate Commerce Commission's latest compilation based on preliminary reports. The index number, based on the 1935-1939 monthly average as 100 and corrected for seasonal variation, was 122.5 for April as compared with March's 120 and April, 1941's 106.9.

April employment in all groups was above that of the previous month and of the corresponding month last year. Largest increases over April, 1941, were: Train and engine service, 18.49 per cent; maintenance of way and structures, 17.13 per cent; yardmasters, switch-tenders, and hostlers, 14.43 per cent; maintenance of equipment and stores, 13.85 per cent; professional, clerical and general, 13.28 per cent. The other two groups—transportation (other than train, engine, and yard) and executives, officials, and staff assistants—were up 8.05 per cent and 6.02 per cent, respectively.

The largest increase over the previous month was the 15.74 per cent rise in the maintenance of way and structures group. The range of increases in other groups was from 0.7 per cent to 2.25 per cent.

Congressional Action on Forwarder Bill Completed

Congressional action on S. 210 was completed on May 11 when the House of Representatives adopted the conference report on that measure which enacts a new Part IV to the Interstate Commerce Act for the regulation of freight forwarders. The Senate had agreed to the conference report on May 7, as noted in the *Railway Age* of May 9, page 911, where the provisions of final version were summarized.

Action came in the Senate after a brief statement by Chairman Wheeler of the committee on interstate commerce; while the discussion in the House was confined to a brief statement from Chairman Lea of the committee on interstate and foreign commerce, and a more comprehensive explanation of the bill by Representative Wolverton, Republican of New Jersey. Chairman Lea expressed confidence that with the enactment of the bill the "evil conditions" which have attended the lack of forwarder regulation "are going to be very largely, if not entirely, removed." Mr. Wolverton touched upon the more important provisions, and appraised the bill as a whole as "a well-considered piece of legislation, worthy to take its place as Part IV of the Interstate Commerce Act."

Rock Island Gets Trucking Certificates

Subject to the usual conditions designed to insure that the trucking operations shall remain auxiliary to rail service, the Interstate Commerce Commission, Division 5, has granted the Rock Island Motor Transit Company, affiliate of the Chicago, Rock Island & Pacific, certificates covering common-carrier trucking operations over six routes between points in Iowa and Illinois. The same decision denied Transit's application for a certificate covering a seventh route between Bucklin, Kans., and Liberal.

Commissioner Rogers, dissenting - in - part, objected because the "key-point" condition imposed by the majority does not prohibit the railroad affiliate from providing an all-out motor service between Chicago and Silvis, Ill. When connected with Transit's Silvis-Omaha route, Mr. Rogers said, this set-up permits a through Chicago-Omaha motor service.

In another decision, Division 5 has granted Transit a certificate covering trucking service between Atchison, Kans., and Trenton, Mo. Here the commission found that the "key-point" condition was not applicable; nor was the old "prior-or-subsequent-haul-by-rail" condition. Thus it put in this one: "No shipments shall be transported by applicant which originate or are destined to points beyond the route herein authorized except those which, in addition to movement by applicant, have had or will have a rail movement immediately beyond said route."

How Car Foremen Can Add to the Effective Car Supply

At the regular monthly meeting of the Car Foremen's Association of Chicago at the LaSalle Hotel, on Monday evening, May 11, the principal address on The Car Foreman's Responsibility for an Adequate Car Supply During This Emergency was presented by F. E. Sperry, general superintendent transportation, Chicago, Burlington & Quincy. Mr. Sperry, who is also a member of the Transportation Officers Advisory committee to the Office of Defense Transportation, pointed out, from his long experience, some of the ways in which car foremen and inspectors can add the equivalent of many new cars to the railroads' inventory by expediting inspection and maintenance practices, reducing the time spent by cars at repair shops and rip tracks, prompt inspection of cars after being unloaded, efficient cleaning and conditioning, and the application of commodity cards for the highest class lading for which the cars are adapted.

Mr. Sperry's comprehensive paper was followed by an extended discussion, in the course of which the necessity for complete co-operation between car forces and transportation men, particularly yardmasters and switching crews, was urged and it was pointed out that the saving of only one revenue hour per day would add the equivalent of 350,000 cars to the present railroad ownership. The need for special attention and prompt return to revenue service of tank cars for oil shipments, and of flat cars and open-top cars required for the movement of war department materials was stressed as being particularly important in the coming months.

Delivers Auto-Railer Train for Carrying Explosives

A three-unit Auto-Railer train, that operates with equal facility on and off the track, and is designed to carry explosives from point to point within a large Midwestern ordnance plant, was delivered this week by the builder, Evans Products Company, from its Highland, Ill., plant following a demonstration of the train Monday at East St. Louis, Ill., before representatives of the Army ordnance department and the press and newsreel services.

The train, which has a payload capacity of 90,000 lb., consists of a locomotive unit and two trailers. The locomotive is powered by a 6-cylinder 125-hp. Waukesha gasoline engine and is driven through a conventional automotive transmission with rear-end drive to two double-wheeled driving axles.

Pneumatic-tired wheels 36 in. in diameter carry the load at all times, both on and off the rails, but flanged steel wheels (four per unit) serve to hold the cars on the rails when the train is moving on the track, these being retracted in pairs individually when it is desired to operate off track. Raising or lowering of the flanged guide wheels is effected by compressed air and requires about 18 sec.

All three units of the train are equipped with standard Westinghouse AB air brakes, controlled from the cab but operating in automotive fashion on brake drums on the inner of each pair of rubber-tired wheels. Air pressure for braking is built up in a reservoir on each unit by a Westinghouse compressor driven from the engine by a power takeoff. Separate sets of brake equipment are provided for track and highway operation of the train, braking at a maximum of 2½ m. p. h. per sec. when

The Three-Car Auto-Railer Train, Its Flanged Wheels Retracted for Operating Over the Highway, Rounds a Corner in Its Demonstration Run This Week

Continued on next left-hand page

They're in the Army Now!

LIMA CONSOLIDATION TYPE LOCOMOTIVES

In the pursuit of peace-time commerce or in waging a war for freedom, steam locomotives are an essential factor.

Typical of the locomotives ordered by the U. S. Army is the one illustrated above. Several of these 2-8-0 Consolidation Type Steam Locomotives were recently delivered to the U. S. War Department by Lima Locomotive Works, Inc.

WEIGHT IN WORKING ORDER, POUNDS			TRACTIVE POWER	TENDER
On Drivers	Engine Truck	Total Engine	at 77% Boiler Pressure	⅔ Capacity Loaded
160,500	19,500	180,000	37,100 lbs.	100,000 lbs.
WHEEL BASE			FIREBOX	GRATE AREA
Driving	Engine	Engine & Tender	Inside	
14′–6″	23′–1″	56′–8–⅞″	88–⅛″ x 70–¼″	43 sq. ft.
BOILER		CYLINDERS		DIAMETER
Diameter	Pressure	Diameter	Stroke	Driving Wheel
70″ O.D. at Front	210 lbs.	21″	26″	50″

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED **INCORPORATED, LIMA, OHIO**

operating on the rails and at a maximum of 10 to 12 m. p. h. per sec. on the highway.

All wheels on the three units "track," that is, follow in the same path as those of the wheels on the locomotive. Their movement is controlled through the tow bars and simplifies the matter of spotting the train above the rails for returning it to on-track operation.

All-welded construction was used in building the train; the bodies are steel sheathed over a tubular frame, and welded to an underframe built up of structural shapes by welding. The interiors of the cars are plywood-lined.

Reed Would Increase Demurrage Charges

Drastically increased demurrage charges, running up to $25 a day, and a reduction in the free time allowed for loading and unloading freight cars are proposed in Senate Joint Resolution 147 which was introduced on May 12 by Senator Clyde Reed, Republican of Kansas.

The resolution provides for 36 hours free time, calculated from the first 7 a. m. after the car has been placed—except "that there shall be deducted from said free time the number of hours between 1 postmeridian and 6 postmeridian the preceding day during which the car was placed and available for loading or unloading." Demurrage charges after the expiration of the free time would be $5 for the first 24 hours, $10 for the second 24 hours, and $25 for the third and each succeeding 24-hour period during which the car is detained by reason of failure to load or unload. Commenting on his proposal Senator Reed said:

"Freight cars are a transportation facility and not a warehouse for storage. In critical times like these, when every freight car must be used to its fullest capacity for transportation, holding them out of service for storage cannot be tolerated. About 90 per cent of shippers unload cars within the free time of 48 hours. . . . When cars are held beyond 48 hours, the shipper pays a demurrage charge of usually $2 per day. Last year the shippers detaining cars for unloading paid $9,000,000 to the railroads as demurrage charges. At $2 per day, this represents 4,500,000 car days. Converted into terms of car use, this represents about 13,000 freight cars in constant detention for unloading. These 13,000 cars are needed for transportation. The ordinary demurrage practice of a nominal charge must be changed for the duration of the war. That is why I am introducing this bill. . . ."

Would Require Registration of Labor Unions

Senator Reynolds, Democrat of North Carolina, has introduced Senate Joint Resolution 148 which would provide for the registration of labor organizations and prohibit the employment of communists, fascists, or members of any Nazi bund by any such organization.

Generally, the resolution differs from a bill introduced by Representative Vinson, Democrat of Georgia, H. R. 6444, details of which were set out in the *Railway Age* of January 31, page 307, only in that the labor unions would be required to register with the Secretary of Labor rather than with the Secretary of Commerce as provided by Mr. Vinson's measure.

At the same time Representative Hobbs, Democrat of Alabama, has offered in the House H. R. 7067, a bill which would provide a fine of not more than $10,000 or imprisonment for not more than 20 years, or both for anyone convicted of attempting to hold up the free flow of interstate commerce. The bill would also give the President the power to call out the Army at any time to prohibit any interference with interstate commerce.

As reported in last week's issue, Joseph B. Eastman, director of the Office of Defense Transportation, urged a similar amendment before a House judiciary subcommittee headed by Mr. Hobbs, but that amendment would have limited the fine and imprisonment to $5,000 and two years or both.

Meanwhile, Representative Boggs, Democrat of Louisiana, has introduced H. R. 7086, a bill to provide for the appointment of persons to guard bridges, railroads, reservoirs, and other utilities necessary to the prosecution of the war. The Secretary of War would be authorized to employ men over 35 years of age to do such guard work, thus relieving the states and cities of such responsibility.

Nelson Urges Stockpiling of Coal

Donald M. Nelson, chairman of the War Production Board, has called on all consumers of coal, especially industrial users and war plants, to stockpile coal at once to the limit of storage capacity. Mr. Nelson made his appeal in an open letter in which he said that transportation difficulties will increase in future months, but that there is still some available carrying capacity on railroads and other transportation facilities which can be used now to transport coal.

The letter included a warning that serious transportation difficulties will ensue in the coming fall and winter months unless the stockpiling of coal is started at once and carried on effectively.

At the same time Joseph B. Eastman, Director of Defense Transportation, declared that bituminous coal movement by railroad to New England at the rate of 310,000 tons a week for the remaining 34 weeks of 1942 will be necessary to maintain the off-peak tonnage spread and thus aid to forestall any possibility of a fuel shortage in the northeastern states through overtaxed rail facilities.

Mr. Eastman pointed to this goal and to the rise in tonnage handled when he revealed that, for the week ending April 25, a total of 5,006 cars were hauled in the all-rail eastward movement, or more than 250,000 tons, as compared with 2,266 cars hauled for the week ending January 10, 1942.

"There is no shortage of coal," asserted Mr. Eastman, "nor will there be. But if consumers wait until the fall and winter months to fill their requirements, a serious transportation shortage will possibly result. This we must avoid. And to make sure that we do avoid it, we must move approximately 6,200 cars of coal a week for the balance of this year to provide the bulk of the estimated 26,000,000 tons that New England will require."

Meanwhile, the ODT is at work on charting various alternate all-rail routes for New England coal so that pressure may be taken off such key points as Potomac Yards at Washington, D. C., and Hagerstown Yards at Hagerstown, Md.

Asks Dismissal of "Jim Crow" Complaint

Contending that any basis for alleging discrimination has been removed, the Chicago, Rock Island & Pacific has asked the Interstate Commerce Commission to dismiss a recent complaint filed with it by C. S. Stamps, a negro residing in Kansas City, Mo., charging that three mid-western railroads had discriminated against his race by forcing him to ride from Dallas, Tex., to Houston in a car with inferior accommodations after he had paid a first class fare. Details of the complaint were set out in the *Railway Age* of February 14, page 391.

The Rock Island's answer asking dismissal of the complaint points out that no present cause exists for it in view of the fact that three months before the filing of the complaint, facilities were established on this particular run equal in all respects to white accommodations.

"If the complainant was earnestly concerned over the character of facilities furnished colored passengers for the future and had no intention to bring a frivolous complaint," declares the road's answer, "he would have informed himself of the facts and, so informed, he would not have invoked needlessly the administrative authority of the Interstate Commerce Commission with the attendant expense."

As a matter of law, the brief continues, the complainant is without legal standing because he was traveling at a reduced rate due to the fact that he is a minister of the gospel and was a "mere licensee as a passenger" and not a full-fare paying passenger. In view of this situation, the road contends that he was in no different status than that of a pass holder. The brief goes on to contend that the carrier does not owe the same duty in providing accommodations to the pass holder that it owes to a full-fare paying passenger.

"No Arbitration" Net Result of T. P. & W. Hearing

Justice Benjamin C. Hilliard of the Colorado Supreme Court completed hearings on the labor dispute of the Toledo, Peoria & Western at Chicago on May 8, in accordance with instructions of the National War Labor Board, but because neither George P. McNear, Jr., president of the railroad, nor a representative of the carrier appeared, the result was "no arbitration." Judge Hilliard had been instructed to make a final decision as to wages and working rules only if both labor and management were represented; otherwise he was to make recommendations on which the Board could make final awards.

Because the testimony given by the Brotherhood of Locomotive Firemen & Enginemen and the Brotherhood of Railroad Trainmen dealt only with the demands of these Brotherhoods, and did not

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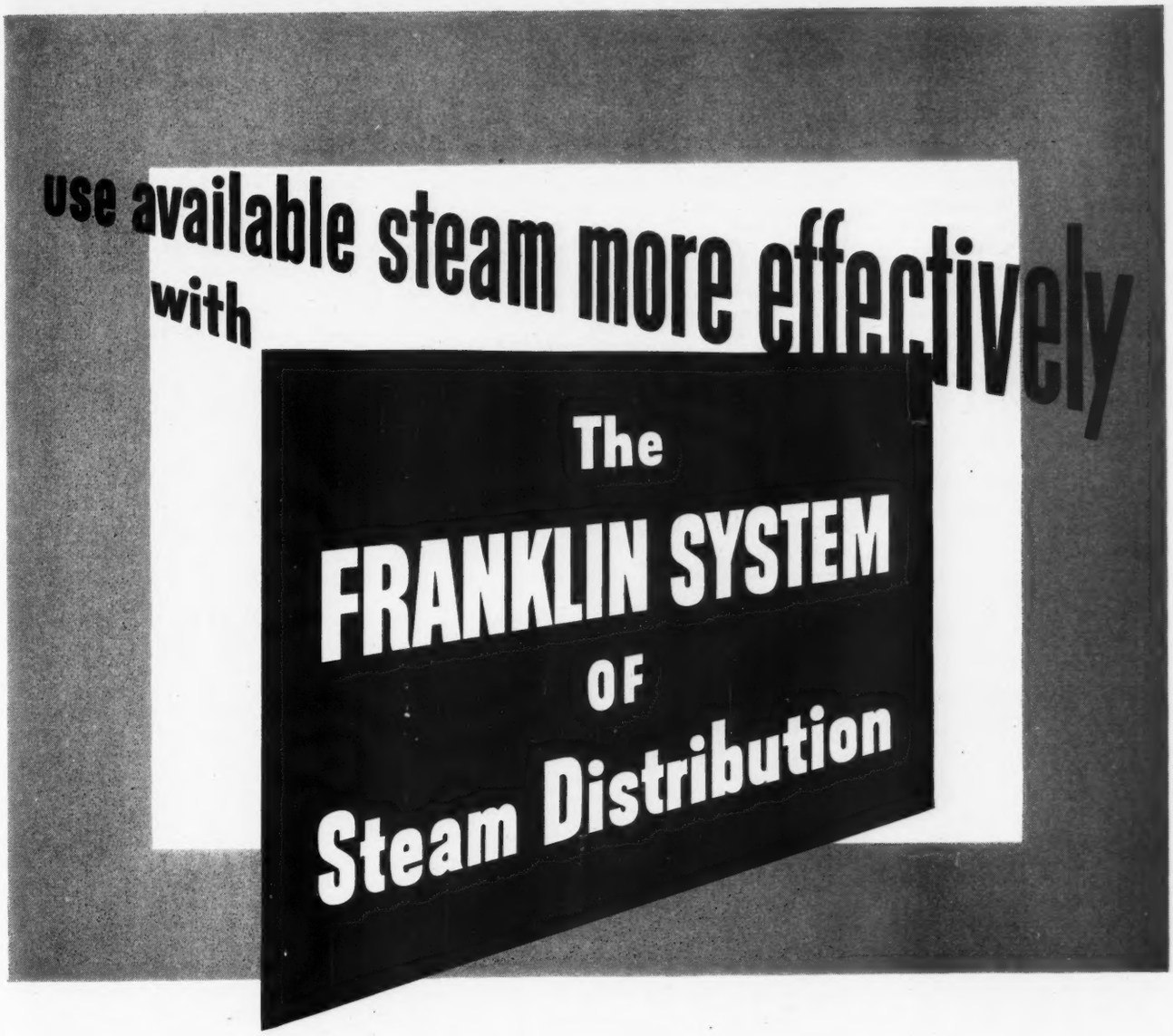

To move the tonnage now offered to the railroads demands that every pound of steam available in locomotive boilers do its maximum of *useful* work.

Due to inherent restrictions, the conventional valve gear and piston valve does not permit this.

The Franklin System of Steam Distribution, however, makes available the full potential power of the locomotive. This is accomplished by increasing the mean effective pressure through:

1. Separation of valve events, so that admission, cut-off, release and compression are independently controlled.
2. Absolutely fixed valve events at all speeds and all cut-offs.
3. Large inlet and exhaust passages and improved steam flow.
4. Reduced cylinder clearance volume.
5. Reduced weight of moving masses and reduced mechanical friction.

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take into consideration the effect of proposed working rules and wages upon the carrier, the record of the hearing lacked data upon which the War Labor Board could make an unbiased ruling. As a result, this situation was taken under consideration and after waiting for a solution as to the problem of introducing further testimony, the hearing was adjourned until May 25.

The Brotherhoods testified that they were asking for so-called standard rules and the same basic pay that prevails on Class I carriers in the East, and introduced exhibits showing the proposed working rules and basic pay prevailing on Class I railroads. A statistical exhibit presented by Harry Arries, statistician for the Brotherhood of Locomotive Firemen & Enginemen, reproduced the Interstate Commerce Commission's figures on income and expenditures for the T. P. & W. The testimony of the Brotherhoods did not compare the proposed working rules and wages with those which were in effect upon the railroad when it was taken over by the government.

C. N. Seeks Larger Share of Dominion Traffic

The Canadian National believes it is entitled to a larger share of government traffic than the 50 per cent it now is assigned. The question was raised by recommendations from the management of the C. N. R. which urged that a written or unwritten arrangement providing an even break between the C. N. and the C. P. on government business be ended.

R. C. Vaughn, president of the C. N., told the House committee in Ottawa which deals with C. N. affairs, "There is certain business that is going away from us which we think we ought to get. We are entitled to over 65 per cent of the country's business by reason of our larger mileage and our greater non-competitive territory. What we say is: lift the restrictions, and leave the field open, and we will take our chances in getting the business to which we are entitled."

Four Cabinet Ministers appeared before the committee. Transport Minister P. J. A. Cardin said he favored leaving the two roads to fight their own battles for business. He opposed interfering to the extent of removing the unwritten 50-50 arrangement unless it was found this was harmful. He thought, however, that it would be better to have no arrangement for division of government business or private business, written or unwritten, so that the roads could be free to fight it out on a basis of service.

Defense Minister J. L. Ralston, responsible for all military matters, said he had never given any instructions in his department as to division of war business—movement of troops and equipment—, that he left this to his subordinates. "I do not care," said Col. Ralston, "what they do as long as they see this job is done efficiently and cheaply and we get the service as fast as possible."

Mr. Cardin, Transport Minister, to whom the management of the government road is responsible, had this to say. "It has been established that the business is to be divided 50-50 between the railways. I am ready to recommend that such restriction be abolished, and that the field be left open."

Munitions Minister C. D. Howe thought the huge business of moving munitions in the country roughly divided itself 60-40, in favor of the C. N., while Postmaster General W. P. Mulock said there was no formula governing division of mail business between the two roads.

Warns States On "Trade Barriers"

(*Continued from page 955*)

Department of Agriculture, who discussed various types of transportation "trade barriers" which affect agriculture.

"In one state," asserted Mr. Crow, "it is claimed that last year it was necessary to run 4,100 extra trains because of a limit on the number of cars to a train. As labor becomes more and more scarce, *we may need to give attention to requirements which make it necessary to provide each train with a crew of a certain number of men regardless of the need for that number to perform the operation.*'

Turning to the subject of wholesale markets, Mr. Crow told the conference that there are markets located on some particular railroad, or controlled by one railroad, that are not open for handling supplies brought in by other railroads or by truck. Restrictions of this type, he noted, force dealers to operate in several places, make it necessary to haul products from one market to another, force buyers to go to several markets to obtain a complete line of supplies and tend to prevent proper flexibility in transportation.

"Invariably," he continued, "these conditions delay the movement of products and lead to excessive capital investment, unnecessary labor, and wasteful use of trucks and other equipment. No railroad or other group should be permitted to build and operate a public market facility without opening such a facility to supplies arriving by all methods of transportation and from all states. To do otherwise is a restraint of trade and a burden on interstate commerce."

Mr. Crow also mentioned the situation which obtains in certain cities where truck owners are forced to hire or pay for unwanted men to help them unload their produce, thus increasing the cost of bringing agricultural commodities to the ultimate consumer.

He also criticized the various state laws dealing with sizes and weights and decried their lack of uniformity and the burden that such a situation places on truck operators going across state lines. In this connection he urged that adoption of the standards of weights and sizes recently worked out by the Public Roads Administration.

Meanwhile, Joseph B. Eastman, Director of Defense Transportation, has urged that peacetime restrictions on sizes and weights of trucks be changed voluntarily by state action where necessary in order to permit the maximum utilization of all highway transport facilities for the war effort.

This policy was set forth in a telegram to the Mississippi Public Service Commission specifically requesting that such restrictions be changed by that body "with necessary safety structure exceptions." Mr. Eastman's views on existing Mississippi legislation had been sought by the State Public Service Commission. He urged that the state limitations be relaxed during the war period to not less than 18,000 lb. for one axle; 30,000 lb. for two axles; and 40,000 lb. for three axles and for tractor-trailer combinations; and that the length of a combination of tractor-semitrailer be increased to not less than 45 ft. Mr. Eastman's recommendations follow those set out by the Bureau of Public Roads as a model for the entire country.

Order No. 1 Made Effective Smoothly in the East

Application on May 1 of minimum tonnage limits on l.c.l. car movements under General Order No. 1 of the Office of Defense Transportation caused only a few ripples in the smooth flow of merchandise freight on the eastern railroads, according to reports based on the first few days of operation under its provisions. On the whole, the number of cars engaged in moving l.c.l. freight has undergone a striking reduction in recent months, while the tonnage hauled generally is still increasing, in some cases by substantial amounts.

On many eastern railroads the six-ton minimum load requirement effective May 1 had on that date already been far surpassed, especially on main lines. In fact, there are many cases where the ten-ton minimum to be required September 1 already is regularly exceeded as a result of the voluntary efforts of operating officers and co-operating shippers. Progress in this direction is continuing, and there now seems to be little doubt among most operating officers that they will be able to comply with both the spirit and the letter of the order, without serious difficulty.

On branch lines of the principal roads and on some smaller lines where light traffic, seasonal fluctuations or other special conditions prevent a substantial increase in minimum carloads under the schedules that have been in effect, the officers responsible had in many instances worked out methods to keep the freight moving with fewer l.c.l. cars long before the O.D.T. order became effective. Individual conditions have guided their choice of possible alternatives, such as using trucks to distribute small tonnages from concentration points, substituting three trips a week for daily schedules, omitting trips on certain days when loads almost invariably run light, turning small shipments over to other rail lines for movement as far as suitable concentration points, and putting old cars not available for interchange movements in service where other solutions are impracticable.

Railroads that operate their own trucks in connection with merchandise cars scheduled to concentration points have extended such operations in many instances, but they report definite limitations to this practice. In cases where train movements or other traffic requirements do not permit

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To show its full effectiveness as a fuel saver the firebox brick arch must be designed for the class of power in which it is to work.

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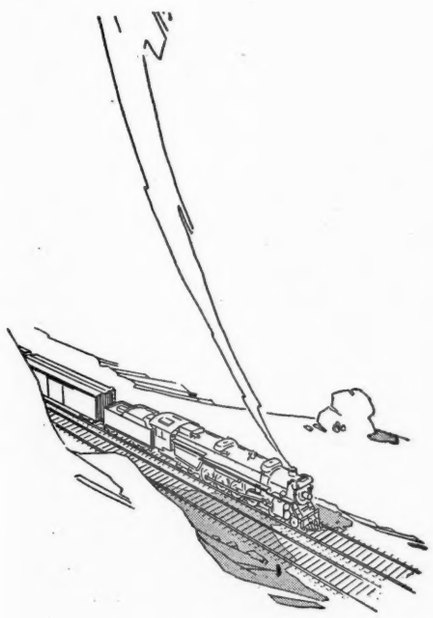
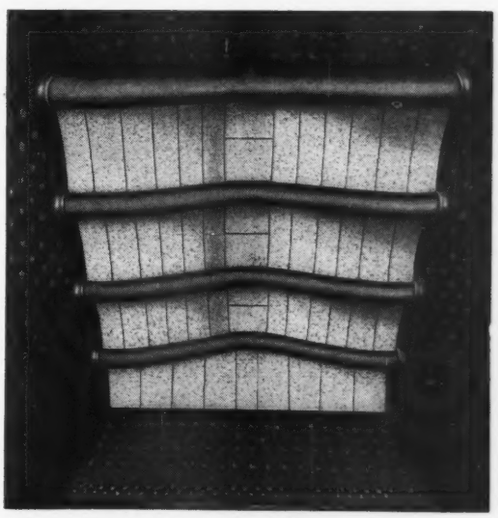
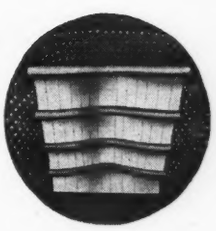
The Security Sectional Brick Arch is the result of many years of engineering and experience in locomotive operation, in studies of combustion and in the making of refractory brick.

Arch Company engineers over a period of many years have gained and applied a knowledge and experience nowhere else available. This knowledge and experience means many thousands of dollars each year in reduced fuel costs to the railroads of this country.





There's More to
SECURITY ARCHES
Than Just Brick



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cars to be returned to terminals appreciably faster when more trucks are used there appears to be no advantage in adding to truck mileage for the sake of reducing car mileage. And O.D.T. orders affecting truck loads and movements restrict the freedom with which they can be used to supplement rail service. Shippers generally have co-operated wholeheartedly in steps taken by the railroads to increase the l.c.l. car load, it is reported.

Sees Roads Doing "Phenomenal Job"

(*Continued from page 956*)

sets the decrease in the number of cars."

What the railroads will be able to do in the future, in the opinion of the Senator, depends upon how their needs for more locomotives and cars are met; the possibilities for further increases in efficiency; shipper cooperation in the interest of prompt release of cars; and the success of the "buy coal now" campaign. With respect to the movement of petroleum and its products to the Eastern seaboard, Senator Reed predicted that a rail movement of "800,000 barrels daily . . . may reasonably be anticipated." In that connection he cited the 640,478-barrels-a-day average for the week ended May 2; and recalled the September, 1941, skepticism of Petroleum Coordinator Ickes who at that time expressed doubt that A. A. R. President J. J. Pelley could make good on a promise that the railroads would handle 200,000 barrels daily. "The railroads are showing an astonishing efficiency in the entire tank-car service," the Senator asserted. "Throughout 1941 all freight cars moved an average of 42.2 miles per day. Through March, 1942, tank cars averaged 71 miles a day." Meanwhile on a couple of round-trip runs totaling 3,750 miles and 3,100 miles, the turn-around time is 15 days and 14 days, respectively; the miles per car-day are 250 and 221.

Most of the questioning of Senator Reed related to the transportation of petroleum and coal. In that connection there was some discussion of the possibilities of further expansion of barge operations and the construction of additional pipe-line facilities. Someone suggested that pipe lines might be constructed of wood, while another thought that wood might also be used for tank-car bodies. Senator Reed did not know whether there had been any consideration of the latter. During the question period, he referred again to his luncheon conference with Messrs. Eastman and Gormley, saying that the latter had suggested that "Joe Eastman should have sufficient authority to say how much steel should go to the railroads." However, the Senator was inclined to agree with Mr. Eastman's view which was: "That somewhere along the line there must be lodged final authority—not in him but in somebody—which could say how much steel should be used for munitions, how much for shipping, how much for battleships, how much for railroads, how much for pipe lines, and that he, being the coordinator of transportation, and his greatest problem the railroads, might be regarded as being favorable to the railroads, and therefore he did not think it was proper that he should have the last say."

Answering a question as to whether there was cooperation between the railroads and ODT, Senator Reed assured his colleagues that "there is 100 per cent cooperation between them. There is no friction between them at all. There is perfect cooperation." Discussing what might be done to speed up unloading of cars by shippers, the Senator revealed his plan to introduce a bill providing for drastic increases in demurrage charges. He also said that the government "ought to pay demurrage, just as any private shipper." Senator Reed introduced the demurrage bill on the following day, as noted elsewhere in this issue.

Superintendents Hold Successful Convention

Nearly 200 division superintendents and other operating officers met in Chicago on Tuesday-Thursday of this week, in the forty-eighth annual convention of the American Association of Railroad Superintendents to consider revisions in operating practices growing out of the changed conditions under which the railways are now functioning. The attendance approximated that of recent years while the interest in the program and the discussions thereon reached new high levels. In addition to the presentation of eight unusually comprehensive reports, the program included: Addresses on Safety in a Period of Expanding Traffic, by C. E. Hill, general safety agent, New York Central System, New York; Black Out Problems, by Dr. Samuel G. Hibben, Director of Applied Lighting, Westinghouse Electric & Manufacturing Co., New York; Problems of Car Supply, by W. C. Kendall, chairman, Car Service Division, Association of American Railroads, Washington, D. C.; L. C. L. Traffic and Car Supply, by W. Bochstahler, chief of the Division of Traffic Movement, Office of Defense Transportation, Washington, D. C.; Keeping Our Own House in Order, by F. H. Schleifer, general chairman, Midwest Shippers Advisory Board and chairman of the Vigilance Committees of that board, Chicago, and on the Grain Situation as It Affects the Railways, by L. M. Betts, manager, Closed Car Section, Association of American Railroads, Washington, D. C.

The high point of the meeting was the luncheon attended by more than 600 persons on Wednesday noon, at which J. B. Eastman, Director, Office of Defense Transportation, Washington, D. C., spoke to the superintendents on their responsibility in these days. In his address he emphasized that "in the last analysis it is on you superintendents that we must rely, for it is you who are in immediate command. It is a situation which calls for more than normal work. It calls for every ounce of initiative and enterprise that you possess. Never again in your lifetime will you have such an opportunity to serve your country as you have to serve it now by putting into your railroading the best that is in you."

Mr. Eastman also emphasized that in these days the railroad superintendents must forget their training in a fiercely competitive school and work with other transportation agencies. "Competition," he said, "makes for progress, but it also makes for waste. When the life of your country is at stake, you do not need competition to stimulate you to do your best, and waste becomes unpardonable."

Plan for Use of Railroad Shops to Produce War Materials

Full use of railway shop facilities, wherever available, to help in the production of war materials, was unanimously agreed to by railroad management and the railroad shop crafts at a recent meeting with representatives of the War Production Board, the Department of Labor, and the Office of Defense Transportation. Announcement of the agreement was made on May 13 by Director Eastman of ODT who presided at the conference.

In agreeing to WPB's request for use of the railroad shops, the representatives of the shop-craft unions "expressed the desire that first consideration be given to the utilization of all available shop facilities for the manufacture of railway equipment such as new cars and locomotives." Meanwhile, Mr. Eastman said that the shops may be asked to consider the production of items used in military and naval equipment, in marine transportation, and in the manufacture of munitions and other war materials.

The ODT director commended the employees' unanimous agreement to work on war materials at railroad basic shop pay, and on the rail shop's 48-hour-week schedule. He pointed out that labor employed on government contracts in other industries works under the provisions of the Walsh-Healey Act on a 40-hour-week basis, and "in many cases at higher hourly wage rates." The Department of Labor, at the request of the War and Navy Departments, has agreed to exempt the railroad industry from the provisions of the Walsh-Healey Act. Mr. Eastman also commended railroad management, calling its willingness to cooperate "another demonstration of the manner in which the railroads are facing the war emergency."

A committee headed by Otto S. Beyer, director of ODT's Division of Transport Personnel, and composed of two other members representing the government, three from the railroad unions, and three from railway management, will be set up to exercise general supervision of the plan. Use of the shops, under the agreement with WPB, will probably be arranged through contractors and subcontractors, Mr. Eastman indicated. It is estimated that 75 major shops and more han 400 back shops, employing 150,000 men, will be affected.

Safe Transportation of Machinery Vital to War Effort

Preparing, crating, blocking and bracing machinery for national defense in order to avoid damage in transportation, which frequently slows down war production, were discussed by key transportation inspectors of 30 western lines at a conference conducted by the Freight Container Bureau of the Association of American Railroads at Chicago on May 11 and 12. The purpose of the meeting was to give transportation inspectors information, facts, tech-

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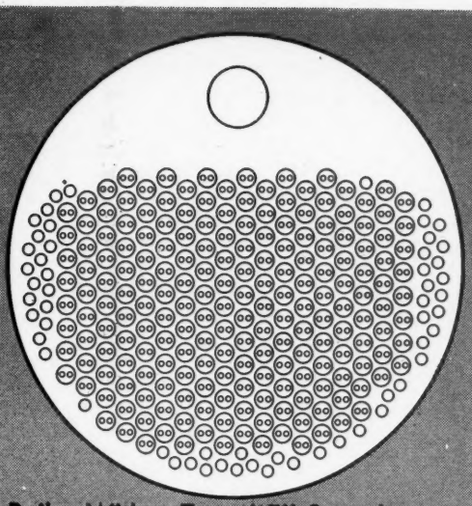
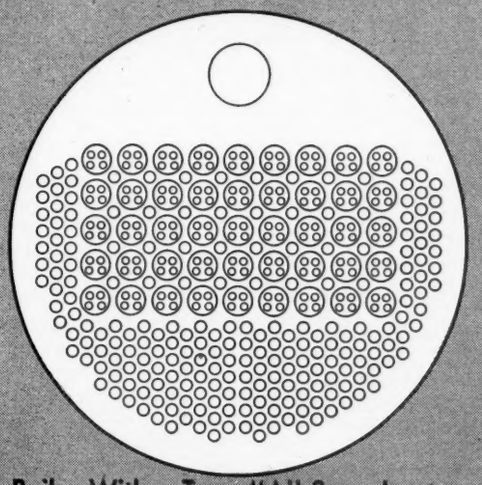
Worth Their Weight In Gold



Boiler With a Type "E" Superheater

ITEM	SUPERHEATER Type "A"	Type "E"	Increase	Increase Per Cent
Tube and flue heating surface...	4,200 sq. ft.	4,641 sq. ft..	441 sq. ft.	10.5
Superheating surface	1,164 sq. ft.	2,088 sq. ft.	924 sq. ft.	79.3
Gas area	1,337 sq. in.	1,374 sq. in.	37 sq. in.	2.76
Steam area	51.3 sq. in.	67.06 sq. in.	15.76 sq. in.	30.7



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Maximum evaporating and superheating surfaces are today two very important factors in the design of the steam locomotive.

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The maximum of these surfaces can be obtained only with the design of small flue boiler and type E superheater. The story is deftly told in the accompanying comparison.

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nical knowledge and demonstrations with models and motion pictures, which they can pass on to their subordinates and to shippers on their respective lines. To this end, the program emphasized the need for the elimination of inadequate training of shippers' employees and lack of information as to proper methods to be employed in crating, blocking and bracing new products.

In opening remarks, Edward Dahill, chief engineer of the Freight Container Bureau, said, "There are millions of dollars' worth of machinery now moving, to be used for many purposes in the preparations by our country to win this war. Many of these machines are of a precision character, designed for one purpose only and set up for straight line production. If one is broken or damaged, it is not merely a simple case of a repair bill, some lost time, and a claim against the railroads. It is lost time for a whole battery of machines—and time is essential right now in the successful and speedy preparations of our army, navy and air forces. The railroads are trying to do more than their part in winning this war, and the safe carrying of this machinery is but one of the many unheralded tasks they have set themselves to do."

The program, in which A. P. Kivlin, assistant chief engineer, and H. R. Flynn, engineer of the Freight Container Bureau, participated, dealt with lumber, nails and the construction of boxing and crating, the use and construction of skids and loading, bracing and blocking.

Construction

WAR DEPARTMENT.—The District Engineer, United States Engineer Office, Omaha, Neb., has awarded a contract to Peter Kiewit Sons Company and George W. Condon Company, Omaha, in amount less than $1,000,000 for railroad construction in the State of Nebraska.

CHICAGO, NORTH SHORE & MILWAUKEE.—A million-dollar grade separation, railroad relocation and highway improvement project, centering around Twenty-Second street in North Chicago, Ill., which will provide better service for the Great Lakes Naval Training Station, is expected to be approved soon and construction will be started as soon thereafter as possible. The project includes the construction of a pedestrian subway from the Naval Training Station entrance, passing underneath State highway No. 42 and the tracks of the North Shore, to give direct access to the depot at that point; the relocation of the Shore line of the North Shore underneath the tracks of the Chicago & North Western and thence to the North Chicago junction with the Skokie line; abandonment of the Shore line from that point through North Chicago and Waukegan, Ill.; the construction of about ¼-mile of four-lane highway to replace an existing 18-ft. highway and the relocation of Sheridan road through North Chicago and Waukegan using the abandoned route of the Shore line. The plan also includes the construction of an overhead grade separation across the relocated tracks of the North Shore on Twenty-Second street in North Chicago, to eliminate this hazardous grade crossing. To replace the abandoned facilities, the North Shore plans to install bus service.

Equipment and Supplies

LOCOMOTIVES

THE LEHIGH & HUDSON RIVER is reported to be contemplating the acquisition of three new steam locomotives of 4-8-2 wheel arrangement.

THE LOUISVILLE & NASHVILLE has placed an order for eight Diesel-electric passenger locomotives of 4,000 hp. each with the Electro-Motive Corporation.

THE DETROIT, TOLEDO & IRONTON has placed an order for four steam locomotives of 2-8-2 wheel arrangement with the Lima Locomotive Works. This road was first reported to be considering the purchase of this equipment in the *Railway Age* of September 27, 1941.

FREIGHT CARS

THE REPUBLIC STEEL COMPANY has ordered 10 hopper cars of 50 tons' capacity from the American Car & Foundry Co.

April Deliveries Totaled 10,552 Cars; Backlog at 74,687 Cars

The number of new freight cars delivered during April totaled 10,552, including 2,607 by railroad company shops and 7,945 by contract car builders. Of this latter number 7,261 were for domestic service and 684 for export. This compares with 10,024 cars delivered in the preceding month of March, 2,211 by railroad company shops and 7,813 by contract car builders, of which latter number 7,745 were for domestic service and 68 for export.

The number of freight cars delivered during the first four months of 1942 totaled 37,989, including 8,257 by railroad company shops and 29,732 by contract car builders. Of this latter number 28,880 were for domestic service and 852 for export. Deliveries thus far this year for domestic service only totaled 37,137 cars.

The backlog of cars on order and undelivered at April 30 totaled 74,687, including 22,763 on order with railroad company shops and 51,924 with contract car builders. Of this latter number 39,952 were on order for domestic railroad companies, with the balance comprising cars for industrial companies and private car lines, United States Government departments, export and lend-lease. Backlog of cars on order at April 30 for domestic railroad companies only totaled 62,715.

SIGNALING

The READING has placed orders with the Union Switch & Signal Co. covering automatic block and interlocking materials for installation in the territory between Reading, Pa., and Lurgan, as well as for the territory between Reading and Allentown, involving 180 searchlight and color light signals, 580 relays, 110 instrument cases, with necessary switch circuit controllers, transformers, electric locks, etc. In addition, the Reading has ordered from the Union Switch & Signal Co. materials for a relay interlocking at its crossing with the Pennsylvania at Williamsport, Pa., involving necessary panel type interlocking machine, color light signals, relays and rectifiers. The railroad will install all of these materials by its regular signal construction forces.

March Locomotive Shipments

March shipments of railroad locomotives totaled 125 as compared with 100 in February and 82 in March, 1941, according to reports from builders to the Department of Commerce's Bureau of the Census. Shipments for this year's first three months totaled 314 locomotives, including 104 steam, six electrics, 185 Diesel-electrics and 19 of other types. During the first quarter of 1941, a total of 190 locomotives was shipped, including 38 steam, eight electrics, 132 Diesel-electrics and 12 of other types.

Unfilled orders at the end of March totaled 1,332 locomotives, including 589 steam, 50 electrics, 660 Diesel-electrics, and 33 of other types. The comparable unfilled-orders data as of March 31, 1941, were 645 locomotives, including 219 steam, 25 electrics, 358 Diesel-electrics, and 43 of other types.

Data supplied by the Car Service Division, Association of American Railroads, on locomotive building in railroad shops show that nine locomotives (seven steam and two electrics) were thus produced in March, compared with two (one steam and one electric) in March, 1941. Railroad shop production during this year's first quarter totaled 19 locomotives (14 steam and five electrics) as compared with four (two steam and two electrics) during the first three months of 1941. As of April 1 there were unfilled orders in railroad shops for a total of 79 locomotives, including 54 steam and 25 electric.

WPB Turned Down Eastman Plea for More Equipment

The War Production Board has refused to alter its recent decision allocating materials for production this year of only 18,000 freight cars and 300 locomotives in addition to the 44,150 cars and 926 locomotives contemplated in schedules previously approved by the former Supply Priorities and Allocations Board. While WPB made no announcement of its decision, it was learned that no additional materials will be forthcoming as a result of

the recent rehearing on the matter which it gave Director Eastman of the Office of Defense Transportation.

Speaking this week before the American Association of Railroad Superintendents at Chicago, Mr. Eastman told how WPB "have not felt able to give what I have deemed necessary." He added that "we all must accept their decision cheerfully and with a profound determination to make it suffice"; for "I know it has been rendered in all good faith and in the light of facts covering the whole situation which go far beyond any that are in my possession."

Supply Trade

Lester E. Godsell, mechanical engineer, has joined the sales force of the **Miller-Lewis Railroad Equipment Corporation.**

The Rails Company, New Haven, Conn., has moved its New York office from 50 Church street to 115 Observer highway, Hoboken, N. J. At this new address the office is located in the express building of the Delaware, Lackawanna & Western.

Fred S. Doran has been elected vice-president of **Joseph T. Ryerson & Son, Inc.** Mr. Doran has under his direction purchases for all ten Ryerson plants, and other responsibilities in connection with the Ryerson war effort.

D. S. Hoffman, who has been elected vice-president of the **Peerless Equipment Company,** Chicago, as reported in the *Railway Age* of May 9, was born in Chicago on October 3, 1904, and graduated from Dartmouth College in 1926. He entered the employ of the Canton Forge & Axle Co., Canton, Ohio, in August of that year and in April, 1928, resigned to become associated with the Maintenance Equipment Company, Chicago. In 1930 he joined the P. & M. Company, working out of the San Francisco, Cal. office and in August, 1936, was appointed assistant vice-president of the Peerless Equipment Company at Chicago, which position he held until his recent promotion.

D. S. Hoffman

Thomas R. Wagner, who has also been elected vice-president of the Peerless Equipment Company, as reported in the *Railway Age* of May 9, was born in Philadelphia, Pa., on November 17, 1897, and graduated from Cornell University, Ithaca, N. Y., in 1918. He served in the Marine Corp in World War I and later was employed by the Automobile Blue Book Publishing Company, the Cornell Wood Products Company and the Sun Oil Company. In 1921 he became associated with the Sinclair Refining Company and served as salesman, western manager of the Railway Sales department and assistant district manager. He resigned from this company to become vice-president of Peerless.

Thomas R. Wagner

Gail E. Spain, general sales manager since November, 1940, for the **Caterpillar Tractor Company,** Peoria, Ill., has been appointed vice-president. **John Q. McDonald,** export sales manager since May, 1940, succeeds Mr. Spain as general sales manager. **J. D. Fletcher,** vice-president, will take over the active direction of export sales, in addition to his duties as head of the export department.

Mr. Spain succeeds the late **D. G. Sherwin** and will move to Caterpillar's San Leandro, Cal., office to direct activities there and co-ordinate operations with those in Peoria. After his graduation from Oregon State college in 1920 with the degree of mechanical engineer, Mr. Spain joined the Willamette Iron & Steel Works at Portland, Ore., and spent nine years with that organization in the sales and engineering departments, during the last two years of which he was sales manager. He joined the Caterpillar Tractor Company at San Leandro in 1929 and was transferred to Peoria the same year. He has held, progressively, the positions of logging representative, assistant manager merchandise department, assistant manager engine sales division, assistant sales manager, manager sales development division and general sales manager.

Mr. McDonald joined the Caterpillar Tractor Company in 1927 as supervisor of agricultural sales for the western United States and the western part of Canada. In 1929 he went to Europe to study the applications of Caterpillar track-type tractors in Russia. Returning to this country in 1930, he served for four years as district representative for the company in various parts of the country. In 1934 he became the company's district representative in London and countries in northern Europe, returning two years later to Peoria to serve as export sales supervisor and assistant export sales manager before his promotion to export sales manager.

Arthur W. Davis has been appointed comptroller of the **American Steel & Wire Co.,** subsidiary of the United States Steel Corporation. Mr. Davis has been treasurer and director of the Electric Household Utilities Corporation, Chicago, and its subsidiary companies since 1938.

Francis J. Burtt has been appointed director of industrial relations of the **American Steel & Wire Co.,** subsidiary of the United States Steel Corporation. He succeeds **E. W. Kempton,** who has been transferred to the United States Steel Corporation of Delaware.

The following four executives of the **Westinghouse Electric & Manufacturing Co.** have been elected vice-presidents: **Andrew H. Phelps,** Pittsburgh, Pa., manager of purchases and traffic; **L. E. Osborne,** Philadelphia, Pa., manager of the steam division; **Frank C. Reed,** Jersey City, N. J., president of the Westinghouse Electric Elevator Company, a subsidiary; and **Walter C. Evans,** Baltimore, Md., general manager of radio, X-ray and broadcasting divisions.

E. J. Fuller, executive vice-president of the **Hunt-Spiller Manufacturing Corporation,** Boston, Mass., has been elected general manager. **Victor W. Ellet,** president will devote more time to corporate matters of the Corporation, in addition to his presidential duties. **A. B. Root, Jr.,** has been appointed vice-president; **Frank W. Lampton,** sales manager, and **Joseph Goostray,** assistant general manager.

E. J. Fuller was born in Clinton, Iowa, in 1883. He entered the service of the Chicago & North Western at an early age as a machinist's apprentice at Clinton. On completing his apprenticeship, he continued at Clinton as machinist and later was appointed to a supervisory position in the mechanical department. From 1911 to 1913 he was chief inspector of new equipment

Elbert J. Fuller

Continued on second left-hand page

ANOTHER *Design* AVAILABL

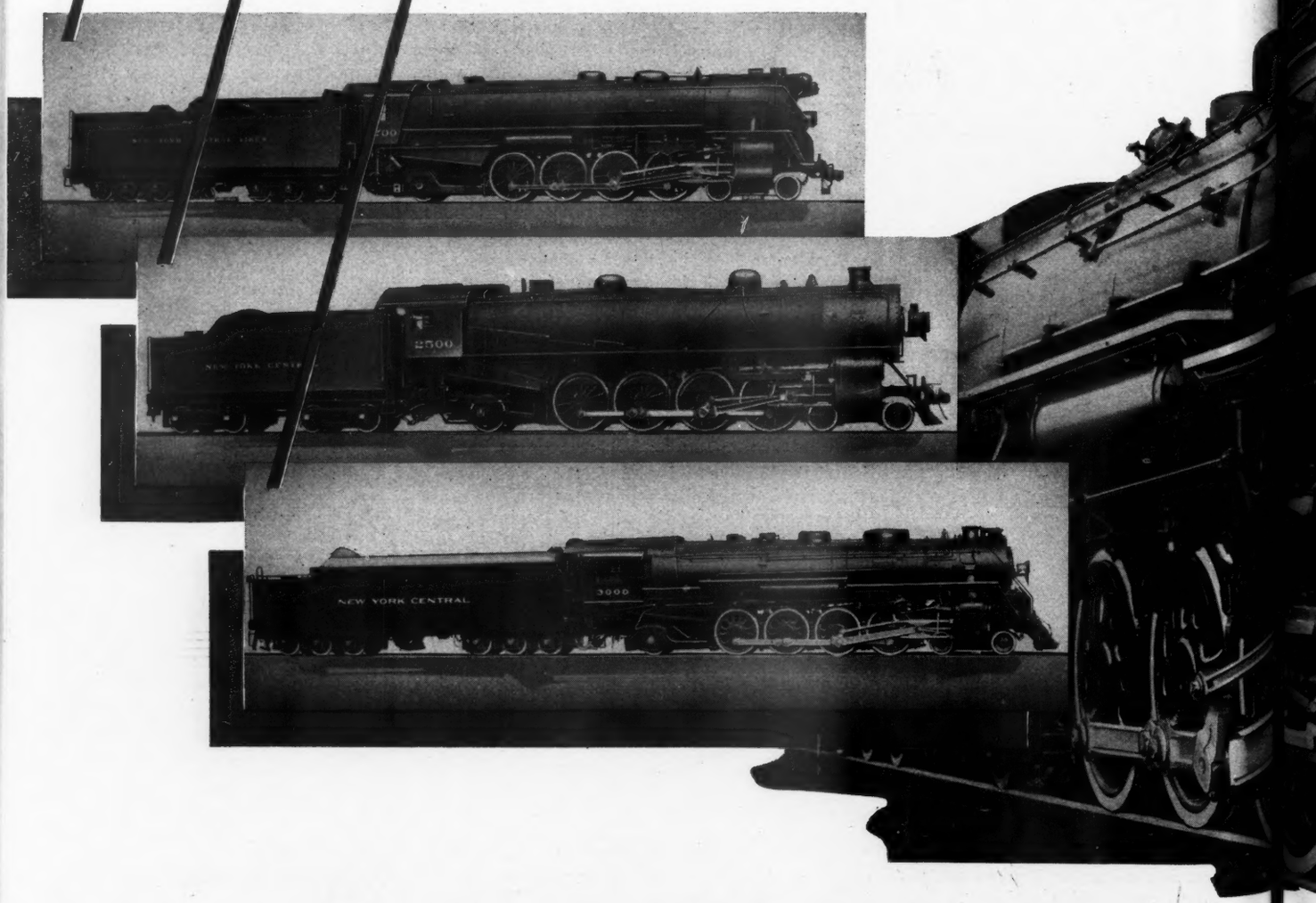
In 1916 — Alco built New York Central's first 4-8-2—No. 2500—and delivered it in July. During the latter half of that year and 1917, we built and delivered 85 more.

1925 — Toward the end of 1924, the New York Central asked American Locomotive for the best model their engineering skill and experience could produce. And in 1925, No. 2700 was delivered. Alco delivered two hundred and fifty of this series by the end of 1929.

1940 — In December, 1940, an improved model, No. 3000, was developed, 35 of which were built by Alco.

That was the evolution of model No. 3064, today's model, 15 of which have just been delivered.

Just such a history is behind many Alco locomotives. The designs have been developed and proven. The jigs and tools are at hand.



TODAY

AMERICAN LOCOMOTIVE

Manufacturers of Mobile Power

Diesel and Electric Locomotives, Marine Diesels, Tanks, Gun Carriages and other Ordnance

for the C. & N. W. at the Schenectady, N. Y., plant of the American Locomotive Company. He entered the employ of the Hunt-Spiller Manufacturing Corporation in 1914 and served as mechanical representative until his appointment as assistant sales manager in 1927. He became

Albert B. Root, Jr.

sales manager in 1928 and was elected executive vice-president in 1936, which latter position he now holds in addition to his new duties as general manager.

A. B. Root, Jr., was born in Boston, Mass., in 1886 and was graduated from Tufts College in 1909 with a degree in Civil Engineering. During his early career he was employed in the maintenance of way department of the Boston & Albany and with the Stone & Webster Engineering Corporation as resident engineer on power projects in Montana, Nevada and Georgia. He joined the Hunt-Spiller Manufacturing Corporation as mechanical engineer in November, 1912, and subsequently held the positions of assistant to the vice-president, assistant to the president, and assistant general manager, which latter position he held until his new appointment as vice-president in March, 1942.

Frank W. Lampton

Frank W. Lampton was born in Fort Scott, Kan., in 1889 and was graduated from a business course at Windsor Business College there. He was employed as a machinist's apprentice with the St. Louis-San Francisco at Fort Scott from 1907 to 1912, and as machinist from 1912 to 1915. From 1915 to 1917 he served as master mechanic with the Arcadia Coal & Mining Co., Arcadia, Kan., and from 1917 to 1926 was again associated with the St. Louis-San Francisco as night roundhouse foreman at Pittsburg, Kan.; general foreman, Wichita, Kan.; general foreman, Thayer, Mo., and general foreman, south shops, Springfield, Mo. Mr. Lampton joined the Hunt-Spiller Manufacturing Corporation in 1926 as representative in the southwest territory and was appointed assistant sales manager in 1941, which latter position he held until his new appointment as sales manager in March of this year.

Joseph Goostray was born in Boston, Mass., in 1890, and was educated as a mechanical engineer at Northeastern University. He joined the Hunt-Spiller Manufacturing Corporation in the pattern department in August, 1914. During the first world war he enlisted in the United States Navy and served as chief draftsman in the engineering and repair office at the U. S. submarine base at New London, Conn., returning to the employ of Hunt-Spiller when the war ended. He

Joseph Goostray

was subsequently promoted to the positions of assistant mechanical engineer, mechanical engineer, and finally mechanical superintendent in charge of maintenance and operation of mechanical and electrical equipment, and of all the departments in which finished machine products are manufactured by the corporation, which latter position he held until his new appointment as assistant general manager.

Joseph T. Ryerson & Son, Inc., of Chicago is this year celebrating its one-hundredth year of business. The company was founded by Joseph T. Ryerson in 1842 as the "Pittsburgh Iron Store" on the banks of the Chicago river when that city's population totaled but 6,000. Since that time the company has expanded to comprise ten plants strategically located throughout the east and middle west, with sales offices in many other cities. Ryerson's chairman of the board today is Edward L. Ryerson, grandson of the founder, who is also chairman of the Inland Steel Company, now its parent company.

Financial

ATCHISON, TOPEKA & SANTA FE-BALTIMORE & OHIO.—*Joint Conveyance.*—The Atchison, Topeka & Santa Fe and the Alton have asked the Interstate Commerce Commission to approve a plan whereby each road will convey to the other an undivided one-half interest in certain land, tracks, and appurtenances adjacent to the Joliet Union Depot in Joliet, Ill., 0.6 mile.

ATLANTA, BIRMINGHAM & COAST.—*Annual Report.*—The 1941 annual statement for this road shows a net income, after interest and other charges, of $213,791, compared with a net deficit of $225,958 in 1940. Selected items from the income statement follow:

	1941	Increase or Decrease Compared with 1940
Average Mileage Operated	639.37	.....
RAILWAY OPERATING REVENUES	$4,662,498	+$1,207,137
Maintenance of way and structures	601,085	+33,563
Maintenance of equipment	721,658	+77,913
Transportation	1,857,116	+385,898
TOTAL OPERATING EXPENSES	3,656,207	+506,598
Operating ratio	78.42	−12.73
NET REVENUE FROM OPERATIONS	1,006,292	+700,539
Railway tax accruals	404,020	+127,709
Railway operating income	602,271	+572,831
Equipment rents —Net Dr.	377,677	+131,520
Joint facility rents —Net Dr.	10,804	+1,561
NET RAILWAY OPERATING INCOME	213,791	+439,749
Other income	35,541	+74
INCOME AVAILABLE FOR FIXED CHARGES	238,983	+439,605
Interest on funded debt	.....	−185
TOTAL FIXED CHARGES	17,831	+3,176
NET INCOME TRANSFERRED TO PROFIT AND LOSS	$221,152	+$436,428

ATLANTIC COAST LINE.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon an interchange track with the Seaboard Air Line at Morriston, Fla., 1,309 ft.

ATLANTIC & NORTH CAROLINA.—*Notes.*—Division 4 of the Interstate Commerce Commission has ordered that its certificate of June 27, 1941, as modified January 19, 1942, and February 26, 1942, be further modified so as to cancel the authority granted to this company to issue $45,000 of five-year three per cent promissory notes, and so as to restore the authority granted to it by the supplemental order of January 19, 1942, to issue at par $170,000 of 10-year three per cent promissory notes and $30,000 of 10-year two per cent promissory notes.

ATLANTIC COAST LINE.—*Annual Report.*—The 1941 annual report of this road shows net income of $11,132,472 after interest and other charges, an increase of $9,308,935 as compared with net income in

1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
Railway Operating Revenues	$67,404,253	+$17,316,269
Maintenance of way	5,909,763	+747,570
Maintenance of equipment	12,245,257	+2,126,595
Transportation	23,938,838	+3,920,087
Total Operating Expenses	46,859,449	+7,291,941
Operating ratio	69.52	−9.48
Net Revenues from Operations	20,544,803	+10,024,328
Railway tax accruals	7,650,000	+3,100,000
Railway operating income	12,894,803	+6,924,328
Equipment rents—Net Dr.	1,983,484	−270,662
Joint facility rents—Net Cr.	169,634	+128,730
Net Railway Operating Income	11,080,953	+7,323,720
Other income	7,380,388	+2,165,347
Total Income	18,461,341	+9,489,066
Interest and rentals	6,420,669	+211,723
Net Income	$11,132,472	+$9,308,935

Canadian Pacific.—*Stockholders Meeting.*—Taking all factors into consideration it appears probable that during the remainder of the current year only a moderate increase in net earnings from railway operations may be anticipated, while it is improbable that other income will be much, if any, higher than in 1941, President D. C. Coleman informed shareholders of this company in his operating and general review given at the annual meeting last week, at which Sir Edward Beatty, chairman of the board, presided. President Coleman prefaced his general review with a tribute to Sir Edward Beatty, who recently found it necessary, for reasons of health to relinquish the presidency of the company.

After reviewing the company's operations for the first quarter, for which period gross earnings rose by $12,232,000, or 26.9 per cent, and net earnings increased by $1,463,000, or 17.2 per cent, Mr. Coleman went on to discuss the prospects for the balance of the year. It appears certain, he said, that increases resulting from development of the war industries will continue, though probably at a lower rate as the plans and resources immediately available approach their maximum capacity.

Chicago, Burlington & Quincy.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon operations over 18.97 miles of line between Sedan, Iowa, and Bloomfield. The proposal involves abandonment by the Burlington of its 4.83-mile branch line between Sedan and Moulton, and abandonment of its operations under trackage rights over the Wabash's 14.14-mile line between Moulton and Bloomfield.

Chicago & Eastern Illinois.—*Five New Directors Elected.*—Five new directors were elected and eight were re-elected at the annual stockholders' meeting at Chicago on May 8. The new directors are Victor V. Boatner, director of the Division of Railway Transport, Office of Defense Transportation, Washington, D. C.; Robert F. Carr, president of the Dearborn Chemical Company, Chicago; J. Travis Fleishel, president of the Fleishel Lumber Company, St. Louis, Mo.; Henry E. Perry, vice-president of Commercial Solvents Corporation, New York; and Bryan S. Reid, general manager of the Socony-Vacuum Oil Company, Chicago. The retiring directors are J. B. Graham, R. C. Graham, J. W. Barriger, III, Barrett Wendell and Carrol Shanks. All officers of the company were re-elected.

Chicago, Burlington & Quincy.—*Annual Report.*—The 1941 annual report of this company shows net income of $10,419,142 after interest and other charges, an increase of $6,026,278 as compared with net income in 1940. Selected items from the income account follow:

	1941	Increase or Decrease Compared with 1940
Railway Operating Revenues	$117,521,355	+$19,890,113
Maintenance of way	16,959,394	+3,606,116
Maintenance of equipment	19,816,531	+3,032,843
Transportation	39,526,886	+4,249,462
Total Operating Expenses	83,047,925	+11,194,052
Operating ratio	70.67	−2.93
Net Revenue from Operations	34,473,430	+8,696,061
Railway tax accruals	11,900,410	+3,202,778
Railway operating income	22,573,020	+5,493,283
Hire of equipment—Net Dr.	1,312,963	−639,972
Joint facility rents—Net Dr.	2,125,053	+81,028
Net Railway Operating Income	19,135,005	+6,052,227
Other income	1,223,122	+152,590
Total Income	20,358,127	+6,204,818
Rent for leased roads and equipment	89,478	+8,335
Interest on funded debt	9,334,465	+13,547
Total Fixed Charges	9,810,458	+152,306
Net Income	$10,419,142	+$6,026,278

Chicago, Rock Island & Pacific.—*Annual Report.*—The 1941 annual report of this road shows a net income, after interest and other charges, of $4,644,583, compared with a net deficit of $5,604,165 in 1940. Selected items from the income statement follow:

	1941	Increase or Decrease Compared with 1940
Average Mileage Operated	7,954.64	+59.84
Railway Operating Revenues	$96,962,499	+$16,260,576
Maintenance of way and structures	12,544,942	+1,335,990
Maintenance of equipment	15,957,791	+1,375,506
Transportation	33,300,975	+3,365,342
Total Operating Expenses	69,105,057	+6,713,612
Operating ratio	71.27	−6.04
Net Revenue from Operations	27,857,442	+9,546,964
Railway tax accruals	5,860,230	+292,000
Railway operating income	21,997,212	+9,254,964
Equipment rents—Net Dr.	3,121,708	−463,163
Joint facility rents—Net Dr.	1,259,122	+235,222
Net Railway Operating Income	17,616,382	+9,482,905
Non-operating income	736,585	+294,955
Total Income	18,352,967	+9,777,859
Rent for leased roads and equipment—Dr.	22,392	−256,341
Total interest	13,505,346	−282,649
Net Income Transferred to Profit and Loss	$4,644,583	+$10,248,748

Chicago & North Western.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon its so-called Hiles branch, extending from Hiles Junction, Wis., easterly to Hiles, 9.1 miles.

Chicago & North Western.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon and dismantle a line extending from Deadwood, S. Dak., to Lead, 4.4 miles.

Erie.—*Bonds.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to issue $739,231 of first consolidated mortgage four per cent bonds, series B; $443,196 of general mortgage 4½ per cent income bonds, series A; and $443,196 of preferred stock, series A (or scrip for any or all of such bonds or preferred stock) to be exchanged for $1,471,600 of prior lien bonds of the New York & Greenwood Lake.

Florida East Coast.—*Ratification of Trustee Appointment.*—Division 4 of the Interstate Commerce Commission has ratified the appointment of John W. Martin as trustee of this company during reorganization proceedings under section 77 of the Bankruptcy Act. At the same time Division 4 fixed Mr. Martin's salary at a maximum rate of $7,000 a year.

Minneapolis & St. Louis.—*Annual Report.*—The 1941 annual report of this road shows a net income, after interest and other charges, of $1,300,463, compared with a net income of $1,375,132 in 1940. Selected items from the income statement follow:

	1941	Increase or Decrease Compared with 1940
Average Mileage Operated	1,409.41	−94.49
Railway Operating Revenues	$10,836,233	+$1,136,459
Maintenance of way and structures	1,802,980	+342,516
Maintenance of equipment	1,697,348	+213,966
Transportation	3,614,212	+328,645
Total Operating Expenses	8,282,084	+1,061,092
Operating ratio	76.43	+1.99
Net Revenue from Operations	2,554,149	+75,367
Railway tax accruals	633,732	+60,199
Railway operating income	1,920,418	+15,168
Equipment rents—Net Dr.	422,795	−60,778
Joint facility rents—Net Dr.	28,334	−3,185
Net Railway Operating Income	1,469,289	+79,130
Non-operating income	61,765	+729
Gross Income	1,531,053	+79,859

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ELECTRO-M

GENERAL MOTORS CORPORATI

Everything

TIME is priceless. Fighting men cannot wait. Every minute — every hour — every day counts. One battleship this year is worth two in 1943. A thousand planes in 1942 are worth ten thousand in 1943.

In this battle of production, the railroads are faced with their biggest job in history — that of speeding America's enormous and ever increasing tonnage of materials, supplies and equipment, requiring the service of every available piece of rolling stock, especially locomotives.

In meeting this challenge, General Motors Diesel Road Locomotives are making possible many operating advantages which are vital to America at war, such as: — reduction in train miles as much as 50 per cent — faster schedules with fewer service delays — increased tonnage hauling capacity — and for each Diesel operated will release as many as five steam locomotives for other important services. And as more Diesels go into service, America's transportation network becomes that much stronger.

WHO SERVES THE RAILROADS — SERVES AMERICA

ENERAL OTORS

DIVISION

LA GRANGE, ILLINOIS, U.S.A.

Rent for leased roads and equipment	22,015	−355
Interest on funded debt	.....	−563
TOTAL DEDUCTIONS FROM GROSS INCOME	230,590	+154,528
NET INCOME	$1,300,463	−$74,669

MINNEAPOLIS & ST. LOUIS.—*Bondholders Approve Plan.*—Coverdale & Colpitts, reorganization manager for the Minneapolis & St. Louis, announced May 12 that a plan and agreement or reorganization of the railroad, dated as of May 1, had been approved by protective committees representing six classes of the company's securities. The I. C. C. has authorized the acquisition of the railroad's properties and issuance of securities as outlined in the plan. Coverdale & Colpitts are inviting the immediate deposit with the Guaranty Trust Company of New York of securities not already deposited under protective committee deposit agreements. Committees representing the various issues are notifying certificate holders that they have until June 12 to dissent from the plan.

PENNSYLVANIA.—*Tenders.*—The treasurer of the Pennsylvania, New York, will receive bids until May 29 for the sale to the company, as of June 1, of $113,790 of first general mortgage bonds of the Pittsburgh, Youngstown & Ashtabula at a price not exceeding par and interest.

SILVERTON NORTHERN.—*Abandonment.*—This company has requested authority from the Interstate Commerce Commission to abandon all of its lines extending from Silverton, Colo., to Eureka, 8.9 miles, and from Silverton, Colo., to Gladstone, 6.9 miles.

SUSQUEHANNA & NEW YORK.—*Abandonment Refused.*—The Pennsylvania Public Utility Commission has refused company's application for the discontinuance, abandonment and dissolution of its facilities, holding that the road is valuable to the nation's war effort. The road was granted permission by the I. C. C. in January to abandon its entire line.

UNION PACIFIC.—*Abandonment by the Oregon Short Line.*—The Oregon Short Line and the Union Pacific, respectively, have been authorized by Division 4 of the Interstate Commerce Commission to abandon that portion of the so-called Raft River branch and the operation thereof extending from Benning, Idaho, to Idahome, 16.8 miles, but have been denied authority to abandon that portion of the branch extending easterly from Declo, Idaho, to Benning, 1.9 miles.

Average Prices of Stocks and Bonds

	May 12	Last week	Last year
Average price of 20 representative railway stocks..	24.77	24.85	29.16
Average price of 20 representative railway bonds..	67.43	66.55	65.85

Dividends Declared

Illinois Central.—Leased Lines.—4 Per Cent Guaranteed, $2.00, semi-annually, payable July 1 to holders of record June 11.

Pittsburgh, Bessemer & Lake Erie.—6 Per Cent Preferred, $1.50, semi-annually, payable June 1 to holders of record May 15.

Railway Officers

EXECUTIVE

Lynne L. White, chief operating officer of the Chicago & North Western, and **Frank G. Fitz-Patrick,** chief traffic officer, have been elected also vice-presidents in charge of operation and traffic, respectively, of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at Chicago and St. Paul, Minn., effective May 15, and coinciding with the leave of absence granted **Col. Carl R. Gray, Jr.,** executive vice-president, who will head the Military Railway Service.

Mr. White was born at Kenwood Park, Iowa, on July 2, 1889, and entered railway service on March 10, 1904, as a file clerk in the passenger department of the Chicago, Rock Island & Pacific at Cedar Rapids, Iowa. After attending business college during 1905 and 1906, he returned

Lynne L. White

to the Rock Island in April of the latter year as a stenographer-clerk in the office of the division passenger agent at Cedar Rapids. From 1907 to 1918, Mr. White served successively as stenographer-clerk, timekeeper, secretary, chief clerk and chief dispatcher at various points on the Rock Island. For a short time he also served as a stenographer and trainmaster's clerk on the St. Louis-San Francisco at Enid, Okla. In February, 1918, he became chief clerk to the general superintendent of the Erie at Chicago, and subsequently served as chief clerk to the general agent at Chicago, chief clerk to the general manager at that point and trainmaster at Hammond, Ind. In June, 1922, Mr. White was promoted to superintendent of the Chicago division, and in April, 1928, he was transferred to Huntington, Ind., in charge of the newly consolidated Marion division. He was advanced to assistant general manager of the Western district, with headquarters at Youngstown, Ohio, in June, 1929, and on September 16, 1929, he was promoted to assistant to the president, with headquarters at Cleveland Ohio. In March, 1933, he was elected also vice-president, with the same headquarters, and in September, 1936, he was made president of the Pittston Company, Dunmore, Pa., a (subsidiary of the Erie, operating coal mining properties). Mr. White returned to the Erie in October, 1938, as vice-president in charge of

Frank G. Fitz-Patrick

purchasing and development, with headquarters at Cleveland, and on January 1, 1940, he went with the North Western as chief operating officer.

Mr. Fitz-Patrick was born on August 28, 1889, and entered the service of the North Western on June 1, 1906, as a car tracer and record clerk at Chicago, and on August 18, 1912, he became traveling agent at Pittsburgh, Pa., being transferred to New York as traveling agent on April 14, 1914. He left the North Western on September 1, 1917, to serve in the army, returning in March, 1920, as general agent at Detroit, Mich.; in October of that year he was transferred to New York as general agent. On August 1, 1937, Mr. Fitz-Patrick was promoted to general eastern agent at New York and on June 1, 1938, he was advanced to chief traffic officer, with headquarters at Chicago.

W. M. Neal, vice-president of the Western Lines of the Canadian Pacific, with headquarters at Winnipeg, Man., has been

W. M. Neal

elected a director and vice-president of the company, with headquarters at Montreal, Que. **William A. Mather,** general manager of the Western lines at Winnipeg, has been promoted to vice-president of the

Western lines, with the same headquarters. Mr. Neal was born on June 20, 1886, at Toronto, Ont., and entered railway service with the Canadian Pacific in 1902, serving as a stenographer, clerk and secretary until 1908, when he was appointed chief clerk to the superintendent of the Souris division. Later in the same year he was appointed assistant chief clerk to the general superintendent of the Manitoba district, and from 1910 to 1916 he served as chief clerk in the car service department, first at Winnipeg and then at Montreal. In the latter year he was appointed car service agent of the Quebec district at Montreal, and later in 1916 he was appointed acting superintendent of car service of the Eastern lines. Mr. Neal then served as assistant superintendent of terminals at Montreal and superintendent of car service of the Eastern lines. In 1917 he became general secretary of the Canadian Railway War Board, returning to the Canadian Pacific in 1920 as assistant general superintendent of the Ontario district. Two years later he was promoted to general superintendent of the Algoma district and in 1924 he was further advanced to assistant to the senior vice-president at Montreal. Mr. Neal

William A. Mather

served as general manager of the Western lines at Winnipeg from November, 1927, until September, 1934, when he was elected vice-president of the Western lines.

Mr. Mather was born at Oshawa, Ont., on September 12, 1885, and attended McGill University. He entered railway service in May, 1903, in the construction department of the Canadian Pacific and in January, 1911, he became resident engineer at Winnipeg. In March, 1912, Mr. Mather was appointed superintendent at Kenora, Ont., being transferred to Medicine Hat, Alta., in January, 1915. On June 1, 1915, he was promoted to assistant general superintendent of the British Columbia district, and was appointed general superintendent of the Saskatchewan district in October, 1918, being transferred to Calgary, Alta., in December, 1932. Mr. Mather was promoted to assistant to vice-president at Montreal, Que., in May, 1933, becoming general manager of the Western lines at Winnipeg in September, 1934.

Ralph J. Hines, president of the Oregon & Northwestern, with headquarters at Chicago, has been elected chairman of the board, and **Charles M. Hines,** senior vice-president and treasurer, has been elected president and treasurer.

FINANCIAL, LEGAL AND ACCOUNTING

C. C. Kerns has been appointed assistant general freight claim agent on the Southern at Chattanooga, Tenn.

S. S. Moore has been appointed assistant to comptroller of the Lehigh Valley at New York.

R. E. Gaugh, assistant to general manager of the Lehigh Valley at Bethlehem, Pa., has been appointed chief statistician.

Arthur J. Winder has been appointed assistant general solicitor of the Norfolk Southern.

R. J. Semsch has been elected vice-president and treasurer and **A. G. Egermayer,** secretary of the Minnesota Western Railway, with headquarters at Minneapolis, Minn.

H. V. Cooper, assistant to the freight claim agent of the Missouri Pacific, has been promoted to freight claim agent, with headquarters as before at St. Louis, Mo., succeeding **R. B. Williamson,** who has retired.

George Nelson has been appointed auditor of miscellaneous accounts for the Southern Pacific, with headquarters at San Francisco, Cal., succeeding **P. J. Kendell,** whose promotion to assistant general auditor was reported in the *Railway Age* of April 4.

M. P. Garcia has been appointed acting general auditor of the Mexico North-Western, with headquarters at Ciudad Juarez, Chih., succeeding to a portion of the duties of **J. E. Romo,** assistant to the vice-president and general auditor, who continues as assistant to the vice-president.

Medard Kerr, local treasurer of the Southern Pacific Company, with headquarters at San Francisco, Cal., has been appointed also treasurer of the Northwestern Pacific and the San Diego & Arizona Eastern, succeeding **Clarence M. Scott,** retired.

Elmer A. Smith, general attorney on the Illinois Central, with headquarters at Chicago, has been promoted to senior general attorney. **William B. Gubbins** and **Robert Mitten,** attorneys, have been advanced to general attorneys and **Anne G. Carter** has been appointed attorney, all with headquarters at Chicago.

TRAFFIC

W. J. Donsbach has been appointed industrial agent of the Lehigh Valley at New York.

N. L. Richmond, office manager to the vice-president in charge of traffic of the Illinois Central, has been promoted to coal traffic manager, with headquarters as before at Chicago, succeeding to a portion of the duties of **Roy E. Barr,** former freight traffic manager, whose election as vice-president in charge of traffic was reported in the *Railway Age* of April 25.

The headquarters of **A. F. Stevens,** agricultural and livestock agent of the Alton, have been transferred from Chicago to Kansas City, Mo.

Russel W. Talbot has been appointed district freight agent of the Pennsylvania at Hagerstown, Md., succeeding **M. H. Lowman,** deceased.

Arthur P. Lait, district passenger agent of the Canadian National, has been appointed general agent, passenger department, with headquarters as before at Washington, D. C.

L. W. Glover, divisions clerk for the Colorado & Southern at Denver, Colo., has been promoted to assistant general freight agent, with the same headquarters, a change of title.

W. H. Crow, assistant traffic manager for the St. Louis-San Francisco at Pensacola, Fla., has been appointed traffic manager, with the same headquarters, a change of title. **E. A. Steinbeck** has been appointed foreign freight agent at New York.

O. H. Griffin, assistant general agent, freight department at Chicago, has been promoted to general agent, freight department, at that point, succeeding **W. P. Cox,** whose promotion to assistant general freight agent at Chicago was reported in the *Railway Age* of February 21.

OPERATING

J. R. Mahoney has been appointed assistant superintendent of the Tennessee Central, a newly created position, with headquarters at Nashville, Tenn.

S. C. Jones, assistant trainmaster on the Illinois Central at Fulton, Ky., has been promoted to trainmaster, with the same headquarters, succeeding **K. E. Dawson,** who has been assigned to other duties.

D. A. Thomson, trainmaster on the Northern Pacific at Fargo, N. D., has been promoted to assistant to the general manager, Eastern district, with headquarters at St. Paul, Minn., succeeding **E. S. Ulyatt.**

C. R. Allen, assistant trainmaster on the Illinois Central at Waterloo, Iowa, has been promoted to trainmaster at Council Bluffs, Iowa, succeeding **T. J. Casey,** who has been transferred to Waterloo, relieving **H. F. Wilson,** who has been assigned to other duties.

Robert H. Dunlop, chief clerk of the vice-president and general manager of the eastern lines of the Canadian Pacific, has been promoted to car accountant, with headquarters at Montreal, Que., succeeding **William Phelan,** who retired on pension on April 1, after more than 52 years of service.

Horace C. Grout, assistant to the vice-president on the Canadian Pacific, with headquarters at Montreal, Que., has been promoted to general manager of the West-

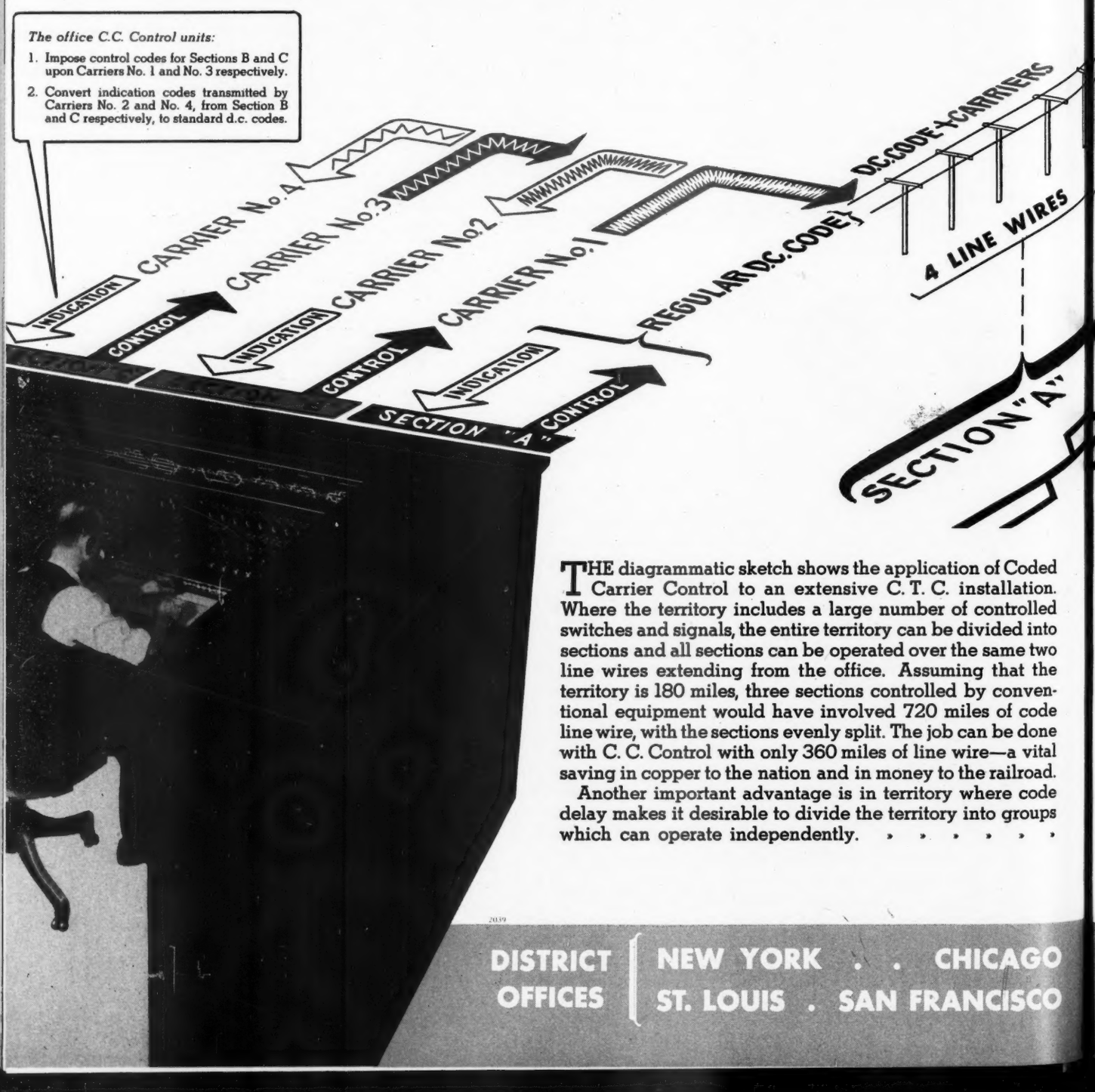
Continued on second left-hand page

Another "Union" Development

CODED CARRIER CONTROL

for use with "Union" C. T. C. Systems

Increases enormously the capacity of "*Union*" systems of C.T.C., because any number of sections may be operated simultaneously over two-wire line.


The office C.C. Control units:
1. Impose control codes for Sections B and C upon Carriers No. 1 and No. 3 respectively.
2. Convert indication codes transmitted by Carriers No. 2 and No. 4, from Section B and C respectively, to standard d.c. codes.
CARRIER No. 4
CARRIER No. 3
CARRIER No. 2
CARRIER No. 1
INDICATION
CONTROL
INDICATION
CONTROL
INDICATION
CONTROL
SECTION "A"
REGULAR D.C. CODE
D.C. CODE + CARRIERS
4 LINE WIRES
SECTION "A"

THE diagrammatic sketch shows the application of Coded Carrier Control to an extensive C. T. C. installation. Where the territory includes a large number of controlled switches and signals, the entire territory can be divided into sections and all sections can be operated over the same two line wires extending from the office. Assuming that the territory is 180 miles, three sections controlled by conventional equipment would have involved 720 miles of code line wire, with the sections evenly split. The job can be done with C. C. Control with only 360 miles of line wire—a vital saving in copper to the nation and in money to the railroad.

Another important advantage is in territory where code delay makes it desirable to divide the territory into groups which can operate independently. . . . . .

2039

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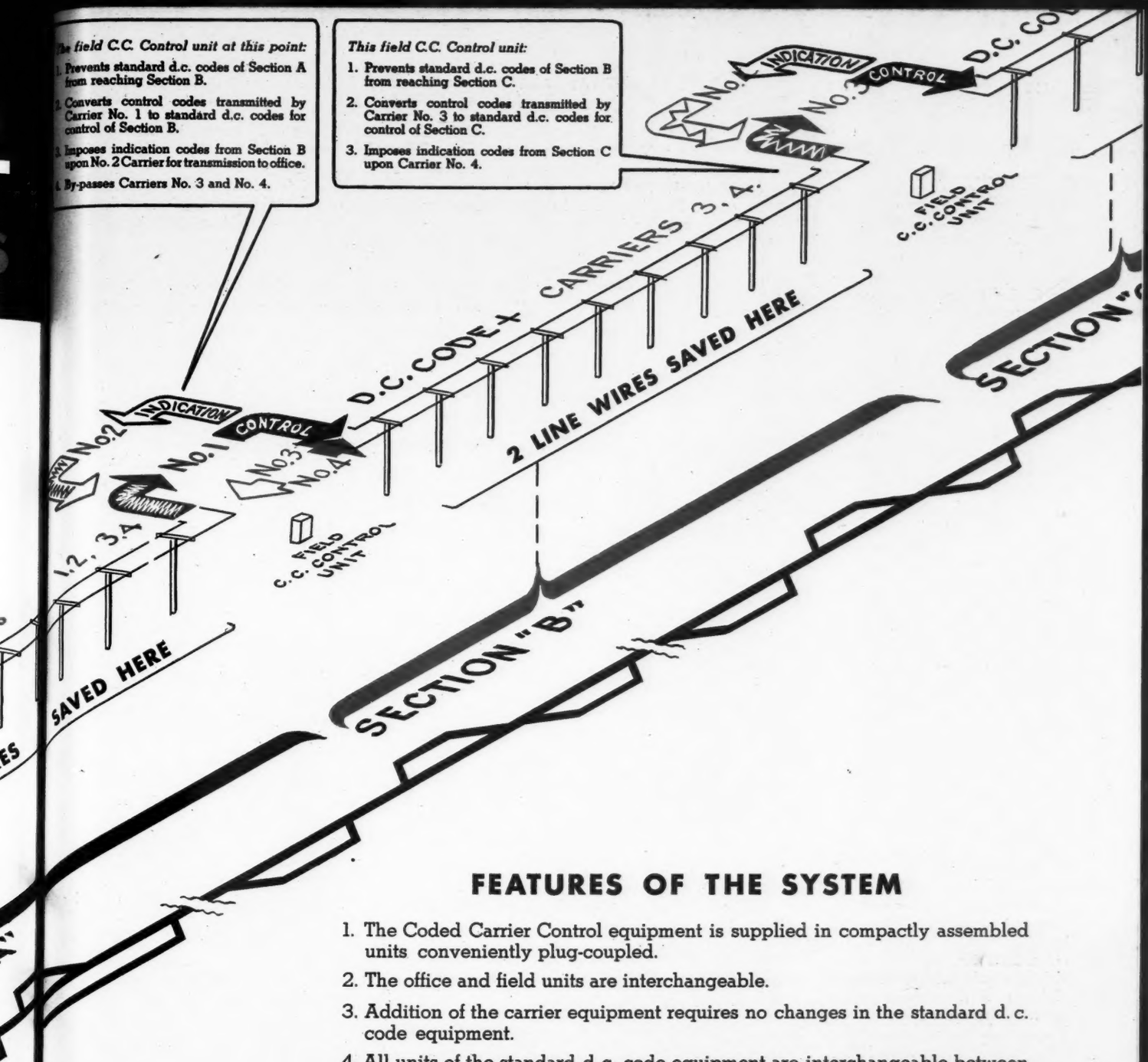
The field C.C. Control unit at this point:
1. Prevents standard d.c. codes of Section A from reaching Section B.
2. Converts control codes transmitted by Carrier No. 1 to standard d.c. codes for control of Section B.
3. Imposes indication codes from Section B upon No. 2 Carrier for transmission to office.
4. By-passes Carriers No. 3 and No. 4.
This field C.C. Control unit:
1. Prevents standard d.c. codes of Section B from reaching Section C.
2. Converts control codes transmitted by Carrier No. 3 to standard d.c. codes for control of Section C.
3. Imposes indication codes from Section C upon Carrier No. 4.
INDICATION
CONTROL
No.2
No.1
No.3
No.4
1.2. 3.4
C.C. FIELD CONTROL UNIT
D.C. CODE + CARRIERS 3.4.
2 LINE WIRES SAVED HERE
SAVED HERE
SECTION "B"
SECTION "C"

FEATURES OF THE SYSTEM

1. The Coded Carrier Control equipment is supplied in compactly assembled units conveniently plug-coupled.
2. The office and field units are interchangeable.
3. Addition of the carrier equipment requires no changes in the standard d.c. code equipment.
4. All units of the standard d.c. code equipment are interchangeable between non-carrier installations and systems employing the new C. C. Control apparatus.
5. "Union" Coded Carrier Control may be used without interference with existing communication circuits of any kind, including carrier, with proper engineering of the installation.
6. The "Union" Coded Carrier Control equipment has been designed specifically to meet signal engineering requirements as to reliability.
7. Telephone and telegraph circuits may be superimposed on all or any part of the C.T.C. line.
8. The section operating with regular d.c. code and all sections using carrier can operate simultaneously.
9. In zones of heavy code traffic delays in transmission of controls and indications can be avoided by operating some of the field locations over a C.C. Control unit.
10. In "Union" C.T.C. Systems the line may be used for T.&T. circuits and this advantage is not destroyed by use of Coded Carrier Control.

• A number of large "Union" C. T. C. installations using the new C. C. Control are now under construction and will soon be in service.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

ern lines, with headquarters at Winnipeg, Man., succeeding **William A. Mather,** whose election as vice-president of the Western lines is reported elsewhere in these columns.

E. G. Rohrbaugh, trainmaster on the Pennsylvania at Cincinnati, Ohio, has been transferred to Terre Haute, Ind., succeeding **C. D. Haupt,** whose appointment as night trainmaster on the Philadelphia Terminal division was reported in the *Railway Age* of April 4. **Claude Crawford,** trainmaster on the Monongahela division, has been transferred to Cincinnati, replacing Mr. Rohrbaugh.

L. H. Black has been appointed trainmaster of the Delaware, Lackawanna & Western, with headquarters at Bangor, Pa., having general supervision over the Bangor and Portland branch and main line territory from Stroudsburg, Pa., to Washington, N. J. **H. B. Hill** has been appointed passenger trainmaster at Hoboken, N. J. **R. B. Kohnstam** has been appointed assistant freight trainmaster, territory east of Denville, N. J., with headquarters at Hoboken.

E. A. Vik, assistant secretary and contract attorney of the Chicago, St. Paul, Minneapolis & Omaha, has been appointed assistant to the executive vice-president-personnel, with headquarters as before at St. Paul, Minn., succeeding **F. J. Vaughn,** who has been appointed superintendent of the Eastern division, with headquarters at Eau Claire, Wis., relieving **Joseph J. Prentice,** who retired on March 25.

Mr. Prentice was born at Clayton, Wis., in 1882 and entered railway service on January 15, 1898, as a telegraph operator on the Omaha, later serving as a train dispatcher and chief train dispatcher. In 1914 he was promoted to assistant superintendent and in 1917 he was advanced to division superintendent, serving on various divisions of the Omaha until his retirement. During the First World War, Mr. Prentice served as general agent for the American Railway Association at Camp Douglas, Wis., while on a leave of absence, and from 1932 to 1937 he served as a major, U. S. A., Reserve Corps, 611th Engineers, Railway Battalion.

MECHANICAL

D. L. Ringler has been appointed general car inspector of the Texas & Pacific, with headquarters at Dallas, Tex., temporarily in place of **J. D. Clyde, Sr.**

Ivan R. Pease, whose promotion to assistant superintendent motive power of the New York, Ontario & Western at Middletown, N. Y., was reported in the *Railway Age* of April 4, was born on July 7, 1898, at Wilton, Me. Mr. Pease attended the University of Maine and entered railroad service on July 1, 1924, with the New York, New Haven & Hartford as special apprentice. He subsequently served in the New Haven locomotive shops as gas engine mechanic, foreman of the Gas Rail Car department and production assistant. From 1931 to 1934 Mr. Pease served with the New England Transportation Company (subsidiary of the New Haven) and from 1934 to 1937 he was with the Universal Motor Mileage Corporation at Boston, Mass. In 1937 he became test supervisor of the New Haven and in 1941 supervisor of apprentices for that road. He was appointed assistant to superintendent motive power of the New York, Ontario & Western later that year, which position he held until his recent promotion. Mr. Pease will also serve as assistant superintendent motive power of the New York, Susquehanna & Western.

Ivan R. Pease

ENGINEERING & SIGNALING

H. A. Wistrich, engineer maintenance of way of the Lehigh Valley at Bethlehem, Pa., has been appointed assistant chief engineer, construction-maintenance.

W. J. Kocher, signal engineer of the Lehigh Valley at Bethlehem, Pa., has been appointed superintendent telegraph and signals. **J. A. Niedeck,** superintendent telegraph, has been appointed assistant superintendent telegraph and signals.

W. T. Alexander, principal assistant engineer of the Gulf Coast Lines and the International Great Northern (Missouri Pacific), with headquarters at Houston, Tex., has been appointed assistant chief engineer of the Texas & Pacific, a newly created position, with headquarters at Dallas, Tex.

SPECIAL

Dr. Adolph Sachs, consultant on the staff of the Union Pacific hospital department, has been appointed medical director of that department and **Dr. J. Frederick Langdon,** district surgeon, has been appointed chief surgeon. Dr. Sachs is a graduate of Creighton University, is professor of medicine at the Creighton University College of Medicine, head of the Medical department of St. Joseph's hospital, Omaha, Neb., a regent of Creighton University, a past-president of the Omaha-Douglas County Medical Society, a past-president of the Nebraska Society for Clinical Research, and a past-president of the Omaha Mid-West Clinical Society.

Dr. Langdon was born at Papillion, Neb., and is a graduate of the Creighton University College of Medicine. He is a vice-president of the St. Catherine's hospital staff at Omaha, is associate professor of surgery at Creighton University, and is one of the founders and a past-president of the Omaha Mid-west Clinical Society. He is also a past-president of the Omaha-Douglas County Medical Society.

OBITUARY

Elvert M. Davis, retired general solicitor of the Pennsylvania at Philadelphia, Pa., died on April 30 at Thomasville, Ga., at the age of 67. Mr. Davis retired on November 30, 1938.

George A. McNicholl, retired general passenger agent of the Canadian National at Vancouver, B. C., died suddenly on May 5 at his home in that city. Mr. McNicholl retired in July, 1941.

George M. Shriver, senior vice-president of the Baltimore & Ohio, with headquarters at Baltimore, Md., died suddenly on May 11 at the Union Memorial hospital in Baltimore, at the age of 74, as the result of an injury sustained in a fall at his home in Pikesville, Md. Mr. Shriver was born at Hightstown, N. J., in 1868 and entered railroad service with the Baltimore & Ohio in 1887 as a clerk in the accounting department, shortly thereafter going with the United States Express Company. In 1888 he became private secretary to Charles F. Mayer, the president of the Consolidation Coal Company, continuing as private secretary when Mr. Mayer was elected president of the Baltimore & Ohio the same year. In 1903 Mr. Shriver was promoted to assistant to president and in 1911 he was elected second vice-president in charge of the financial and accounting departments. On March 1, 1920, following relinquishment of federal control, he was elected senior vice-president of the company, in charge of the accounting, treasury, claim and relief departments, and, in 1922, was elected a member of the board of directors, continuing as such until his death. Mr. Shriver was also a director of the Central of New Jersey and the Railway Express Agency, in addition to several other companies. At important rate hearings during the past 30 years before the Interstate Commerce Commission, Mr. Shriver represented not only the Baltimore & Ohio, but in some cases the railroads generally.

George M. Shriver

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"	#7.48—1 span deck girder 50'	38,200 "
"	#10.58—3 span thru girder, each span 58'	209,125 "
"	#12.47—2 span thru girder, each span 78'	232,098 "
"	#13.24—1—43' deck girder span; 1—66' deck truss span	100,324 "
"	#13.50—1—26' deck plate girder span	12,019 "
"	#16.64—1—40' thru girder span	20,487 "
"	#18.33—2 span deck plate girder, each span 22'	10,000 "
"	#23.92—1 span 45' deck plate girder	30,600 "
"	#32.92—1 span 36' deck plate girder	16,450 "
"	#36.56—1 span 62' deck plate girder	53,460 "
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6 small deck plate bridges crossing brooks, from 15' to 19' span, combined weight		44,230 "

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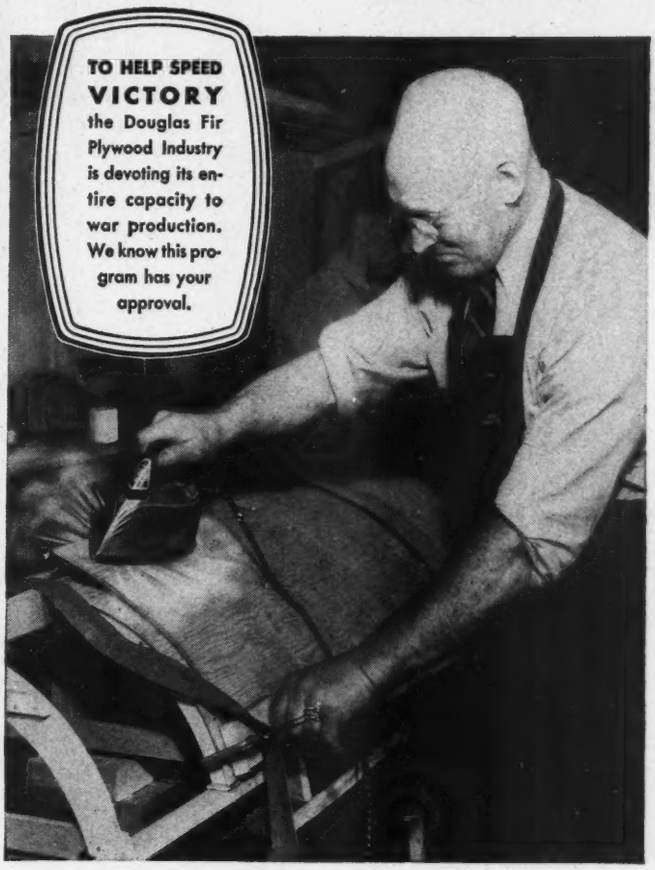
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